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Therapeutic Gazette.

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Original Communications.

*TREATMENT OF ASTHMA AND HAY-FEVER.**

BY ERNEST KINGSCOTE, M.B., C.M., L.R.C.S. EDIN., London, England.

Owing to the limited time at my disposal I will not attempt to explain or defend the theories on which the following remarks are based. Those of you who are interested in the subject I refer to my work entitled "Asthma: Recent Developments in its Treatment," published by Glaisher of Wigmore Street in 1899.

Asthma is a symptom and not a disease, just as headaches, coughs, and epileptic convulsions are symptoms. Indeed Trousseau aptly describes asthma as an "epilepsy of the lungs."

By asthma I mean the spasmodic variety. This must not be confounded with cardiac dyspnea, *which often accompanies it.* It consists in spasmodic contractions of the involuntary muscles surrounding the bronchioles, and of the overaction of the voluntary muscles of respiration in their efforts to overcome these contractions.

It is of little avail, therefore, to attempt

*A paper read before the Section of Pharmacology and Therapeutics of the British Medical Association, August, 1900.

to eradicate asthma by local applications to the lungs or by constitutional remedies which tend to lower nervous excitability, because when the effect of these has passed off we remain *in statu quo*. Now there is one way, and only one known way, of producing asthma artificially. It is as follows: If we anesthetize a dog, divide the left vagus in in the neck, and gently stimulate the proximal end with electricity, we produce *asthma in the right lung and spasmodic contractions of the right half of the diaphragm.*

Therefore we must look for the cause of asthma in some tissue or tissues supplied by the vagi and sympathetic nervous system (Gaskell has pointed out that the sympathetic system is physiologically an extension of the vagi), or in a lesion of the nerves themselves, as none but a nervous irritation could influence so wide an area as that of the lungs. When we consider what a wide range these nerves have, it is clear that we must seek for the cause or causes of asthma in the area of their origin or distribution—for instance, in the brain, the heart, the lungs, the liver, the spleen, the uterus, the kidneys, etc.—as exemplified by dyscrasic asthma (cardiac asthma), bronchitic asthma, hepatic asthma, splenic asthma, pelvic asthma, renal asthma, etc.

There are, however, three pretty constant factors in cases of asthma of long standing; these are cardiac dilatation, acute vesicular emphysema, and chronic congestion of the liver. These conditions must be dispersed, in addition to any other causes, in order to cure the patient.

With regard to cardiac dilatation I have endeavored to show in a series of papers how the dilated organ may impinge on the vagi (which lie immediately behind it on the bony spine), and so irritate them as to produce the asthmatic spasm.

Emphysema tends to produce asthma by (*a*) dilating the heart, and (*b*) interfering with the pulmonary circulation.

In some cases either or all of these conditions (I have seldom seen a case without them) may be the sole remaining causes of asthma—the original cause or causes having worn itself or themselves out.

The emphysema is easy to diagnose, but the exact amount of cardiac dilatation is well-nigh impossible to determine by the ordinary methods of percussion on account of the emphysema.

TREATMENT.

(*a*) *Special.*—Having ascertained the vagal or sympathetic irritation (which is not such a difficult matter as might appear, from the fact that there are generally leading symptoms, *e. g.*, dyspepsia, cough, uterine discharge, albuminuria, headache, etc., which serve to indicate the site), endeavor to remove it. If there be a plug of wax in the ear, polypi in the nose, remove them; if bronchitis, hepatic congestion, dyspepsia, or uterine discharge, are present, exhibit appropriate treatment.

We now have to deal with cardiac dilatation and emphysema. I know of no better or surer means to reduce the former than the Schott treatment, whereas the latter may be reduced by breathing exercises suggested by Harry Campbell in his work on "Breathing Exercises in Disease." The following is my special manner of conducting them:

The upper part of the thorax being fixed and the breathing therefore mostly abdominal, it should be our endeavor to modify these relations. I instruct the patient to place a towel at the back of the waist, then to quickly blow out as though he were trying to inflate a paper bag (this is to empty the lungs of their residual air), and as he does so to firmly bring the ends of the towel forward until the hands meet in such a manner that the towel shall overlap the lower ribs.

The lungs are now empty and the lower ribs fixed by the constriction of the towel.

I now instruct the patient, while being careful to retain the towel in its position, to inhale slowly but forcibly through the nose. As the lower part of the thorax cannot expand owing to the pressure of the towel, the upper thorax is compelled to do so, so powerful are the voluntary muscles of inspiration; and as the thorax is not a rigid box, but a very adaptable cage, by means of these exercises it soon recovers its normal respiratory movements, unless the costal cartilages have become fixed by ossification.

I have seen quite a number of cases gain as much as two to three inches in chest expansion by these means—that is to say, before the commencement of the treatment the difference between the chest measurements, in complete expiration and full inspiration at the level of the nipples, has been one inch, whereas on its completion it has increased to three or four inches.

Further, as nearly all the cases suffer from suboxidation of the blood and anemia, I am in the habit of giving them inhalations of pure oxygen gas several times a day, and the peptonate of iron, which is not assimilated

until it reaches the alkaline influence of the intestines, and does not therefore upset the stomach, neither is it astringent.

The patient should also be encouraged to be in the open air as much as possible.

(*b*) *General.*—It is unnecessary for me to say anything on this score, as any intelligent practitioner will be able to treat symptoms as they supervene.

Since Hippocrates discovered asthma some 300 years B. C. it has been the bugbear of the profession.

"The proof of the pudding is in the eating."

I am able to assert that in a period extending over six years ten per cent of my patients suffering from asthma have been improved, and ninety per cent cured outright, by treating them on the foregoing lines.

Hay-fever is allied to asthma, and all my patients suffering from this symptom have been cured.

This being the case, I have no compunction in urging my professional brethren to investigate these theories and methods and test them for themselves. My book on Asthma contains a number of cases with full notes.

THE USE AND ABUSE OF CARDIAC STIMULANTS.

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia; Physician to the Jefferson Hospital.

My object in writing this paper is to call attention to the very common disregard of certain essential details concerning the action of this important class of drugs. There can be no doubt that their activities are often misunderstood and misapplied, and there is probably no class of patients which suffers more from their irrational use than physicians themselves. I make this statement because I frequently see physicians who present themselves as patients suffering from disordered cardiac action, firmly convinced in some cases that they have grave heart trouble, and in whom most of the symptoms which present themselves are due to the excessive use of digitalis. In many instances the history of the patient is that being somewhat tired out by the exactions of their work they began to have "tired hearts." This condition resulted in some palpitation on exertion, or other symptom which pointed to cardiac disorder, and recourse was had to the digitalis bottle with a generosity in dosage which was excessive and apparently based on the theory of some laymen that "if a little is good more will be better." As the heart does not need digitalis, but rest, it is but temporarily benefited, if at all, and the dose is increased still further. Finally marked irregularity in force and rhythm is produced by the excessive action of the remedy, and the introspective physician becomes convinced that the malady is serious, and concludes that his race is run. Only after another physician is called in is the real cause of the disorder recognized and relieved. Not uncommonly the cardiac distress is augmented by the fact that the physician has attempted, while actively at work, to keep up his energies by liberal potations of strong coffee provided for him at home or by patients' friends. Here again the result is disastrous, because the tired nervous system and heart are spurred to increased endeavor at a time when they demand and should have rest.

For the sake of the physician and his patient, therefore, it would seem wise to recall the fact that the best medicine for a tired heart is rest, not stimulants, except they be conjoined with rest, and that a little patience as to the time of recovery should be exercised instead of attempting to hurry the recovery by large doses which overstimulate before it is possible for the process of repair to be complete.

This matter of rest for the heart is too often overlooked and ignored, and it is forgotten that this viscus, although designed to work constantly, is often exhausted almost to the border of breakdown.

Not only is rest needed for the tired but otherwise healthy heart, but it is even more needful in cases in which there is cardiac breakdown, actual or threatened, in cases already suffering from grave valvular lesions. The cardiac stimulants are sometimes expected to perform miracles, although the patient pursues the same mode of life as before. This is in reality an abuse of a drug, since it is being used to do something which is practically impossible.

Another erroneous use of cardiac stimulants is their employment when it may be that a state of undue excitation is present and that cardiac sedatives are needed. Not uncommonly in some cases of cardiac irregularity the use of small doses of aconite or veratrum viride will produce the results desired.

Again, this class of drugs are often given without due regard to the exact state they

are expected to meet. A patient with a feeble heart receives digitalis, it may be, to overcome this feebleness, when in reality the cause of the feebleness lies in a degenerated heart muscle which is incapable of gaining any advantage from this drug, and the drug by contracting the blood-vessels actually increases the labor of the heart. Under these circumstances, if any drug is used it should be one, like strophanthus or cactus, the action of which is cardiac, and but slightly, if at all, vascular.

Then, too, it is not rare to find digitalis given in full dose to cases of failing heart when the chief cause of the failure lies not in the heart itself, but because there is a state of high arterial spasm or atheroma, which by preventing the easy flow of blood in the arteries gives the heart an immense amount of work to perform. In such cases, if digitalis is given for the heart muscle, its vascular effect and the already existing abnormal tension must be simultaneously relieved by the use of vascular relaxants such as the nitrites.

Finally, in all heart disorders it is well before using powerful heart tonics to make a determined effort to discover if any cause exists which may be removed and thereby really cure the condition. Not rarely the prohibition of the excessive use of tobacco, of alcoholic drinks, of excessive feeding, or sexual excitement, will be the means of dispensing with the cardiac tonic, when without these prohibitions the remedy will be useless.

LEUCORRHEA: ITS CAUSES AND TREATMENT.

By John Cooke Hirst, M.D.,
Assistant Obstetrician, University Hospital, Philadelphia.

There is perhaps no single condition so distressing to the patient or so exasperating to her medical attendant as leucorrhea. Except in a few instances, such as specific and septic infections, leucorrhea is almost always secondary.

Speaking broadly, the discharge can have its origin in one of three places: (1) the vagina, (2) the cervix, and (3) the endometrium of the body of the uterus.

The discharges vary greatly in character, depending upon their point of origin.

Vaginal leucorrhea is, always excepting gonorrheal discharge, thin and serous, rarely thick, and still more rarely streaked with blood.

Cervical leucorrhea is extremely thick, very abundant, and rarely streaked with blood.

Corporeal leucorrhea is thinner, often offensive and excoriating in character, and quite commonly streaked with blood. I have seen patients whose thighs have been excoriated on the inner surface for a distance of four to six inches on either side, as a result of such a discharge.

Leucorrhea is very common in women whose general health and vitality have been lowered for any reason. It would seem that almost any local or general condition slightly out of the normal sets up a leucorrhea. It would be useless to attempt to give a list of the causes, but as an instance of an unusual etiology I may mention that I have seen a stubborn leucorrhea in a girl of twenty-four, which was traced both by her medical attendant and myself to ungratified sexual excitement.

When a patient presents herself complaining of leucorrhea, the first thing to do is to determine the cause, if possible. Any local treatment would be worse than useless, unless the source of the trouble be removed at the same time.

Vaginal leucorrhea it has been my custom to treat by the use of tonics for the general health, astringent douches of alum and zinc sulphate, and the occasional use of a solution of silver nitrate, gr. x–xx to f ℥ j. I apply this latter by inserting a cylindrical speculum, filling it full of the solution, and then slowly withdrawing the instrument, thus making sure that the solution reaches every part of the vaginal wall. This is more satisfactory than the use of a swab. This treatment, combined with douches of corrosive sublimate 1:4000, is the one I use in gonorrhea, and it has given me perfect results.

Cervical leucorrhea, always excluding a gonorrheal infection, is usually due to a catarrhal inflammation of the cervical endometrium, usually secondary to some other condition. The discharge here is very thick and copious, necessitating the wearing of a napkin. It is often accompanied by erosion of the cervix. This erosion, when not due to laceration, is produced by swelling and prolapse of the cervical endometrium, and then desquamation of the squamous epithelium underneath the prolapsed mucous membrane. It has been my experience that when such an endometritis exists it usually involves the corporeal endometrium as well, so that we can often cure the condition entirely, or at least form a much better foun-

dation for satisfactory after-treatment, by a thorough curettement. My non-operative treatment consists in *hot* astringent douches, painting the vaginal vault with Churchill's tincture of iodine, and the use of boroglyceride tampons three times a week, the whole combined with a general tonic treatment. I always prescribe tonics for these patients on general principles. They are generally indicated, and can at the worst do no harm. The only precaution taken is not to prescribe iron in cases where there is a tendency to uterine hemorrhage.

When this treatment has not the desired effect I begin using protargol bougies by the method I shall presently describe.

Leucorrhea from the uterine body is nearly always associated with an endometritis. It is a peculiarity of the uterine mucosa that when it becomes inflamed it hypertrophies so that from a normal thickness of one millimeter we may get endometrium of four or five times that thickness. Acute endometritis in this locality is nearly always septic from a labor or miscarriage. The treatment should be curettement to remove the hypertrophied masses; then tonic treatment with intra-uterine medication of one of the new silver salts in the form of bougies.

27 South Nineteenth Street.

NOTES ON THE USE OF LARGE DOSES OF STRYCHNINE IN TIC-DOULOUREUX.

By Chas. S. Potts, M.D.,

Instructor in Nervous Diseases at the University of Pennsylvania; Assistant Neurologist to the University Hospital.

At the meeting in 1896 of the Association of American Physicians, Dana* advocated a treatment of tic-douloureux which consisted of the following procedures:

1. The hypodermic injection of large doses of strychnine.
2. Rest in bed, with light diet and diuretics.
3. The use of iodide of potassium and tincture of chloride of iron.

The essential part of the treatment is the strychnine, which is given hypodermically once daily. The beginning dose should be about one-thirtieth grain, and this is increased gradually until in the course of about two weeks, sometimes longer, the maximum dose of one-eighth to one-fourth grain, according to the physiological action produced, can be given. The maximum dose is continued for a week or ten days, and then gradually reduced to the commencing dose. The entire course occupies five to six weeks. Associated with this the patient must rest in bed, be given diet which does not require chewing, as milk, eggs, etc., and enjoined to talk as little as possible and avoid all excitement. As mentioned above, potassium iodide, tincture of chloride of iron, and other tonics may be advantageously added to the treatment.

Some cases may do well without absolute rest in bed, but when possible this should be insisted upon.

In his first paper Dana reported six cases—four men and two women—five of which were relieved.

In another paper* he, in the light of further experience gained from fifteen cases, says that the patients most likely to be benefited are those who have suffered from the disease not over two years, and who are anemic and exhausted. Improvement, however, may be obtained in cases that have lasted four to five years. Those who have suffered for longer periods than this, and who have arteriosclerosis and neuritis, are not so likely to be benefited, although in some cases remissions of varying duration may be caused. It is also stated that even in the most favorable cases relapses after a few years may occur.

The writer has treated two patients by this method, one of whom was obliged to undergo two courses, having had a return of pain after twenty-one months of comfort. In this case the results obtained were all that could be desired. In the second case the treatment failed. The histories are briefly appended:

Case I.—Mrs. H., aged forty-five years, was referred by Dr. J. K. Evans, of Malvern, Pa. She was first seen in October, 1897. She was a thin, pale woman who had had the care of a country hotel, and consequently was overworked. All her life she had been of a nervous disposition. About one year previous to coming under observation she began to have pain in the infraorbital region of the right side. This gradually increased in severity, and became associated with severe paroxysms of pain which would dart in the course of all three branches of the trigeminal nerve, and were associated with marked muscular twitchings. Opening

Boston Medical and Surgical Journal, July 2, 1896.

Journal of the American Medical Association, May 5, 1900.

the mouth or protruding the tongue would excite these paroxysms, while eating was often impossible. Profuse lacrimation also attended the attacks. Tenderness was present over the supraorbital and infraorbital foraminæ and the gums on the affected side, and also on the right side of the tongue. Sleep had been practically impossible for some time. The heart, kidneys, and lungs were normal, and no evidence of arteriosclerosis could be detected. A few decayed teeth were removed before the treatment was commenced.

She was placed in bed, given liquid diet (principally milk), and a mixture of tinctura ferri chloridi and Fowler's solution ordered three times daily. The commencing dose of strychnine was one-thirtieth grain; this was gradually increased until in seventeen days one-eighth grain was given. This caused marked evidences of the action of the drug, and was the maximum dose for this patient. The pain markedly subsided in about a week after the treatment was begun. In seven weeks treatment, excepting the tonic mixture above mentioned, was discontinued, and the patient was entirely comfortable.

This continued until June, 1899, when after a season of hard work and insufficient rest the pain returned, soon becoming severe, so that for several weeks before being seen by me she had not been in bed. The pain resisted all the usual treatment for neuralgia.

The patient was placed in bed again and the treatment carried out as before. By the end of the first week there was marked relief, and in seventeen days all pain and tenderness had disappeared. There has been no return of pain since.

Case II.—Miss M., aged thirty-nine years, was seen in June, 1900. There was nothing notable in either the family or previous history. The pain began in July, 1899, after she had been under a prolonged mental strain. It first appeared in the upper jaw of the right side and was darting and paroxysmal in character. It did not become very severe until a few months before coming under observation. At this time the entire right side of the face and scalp were affected. The patient was a large, apparently healthy woman; when the paroxysms would come on she would moan and roll about the bed. The muscles would then twitch and the eye water. Talking would bring on a paroxysm. The tongue and gums were not affected.

After being placed on the treatment there was relief for four or five days. The pain then returned, and after the maximum dose of strychnine was reached, without benefit being obtained, she was operated upon by Dr. A. C. Wood, who performed Carnochan's operation for removal of the second division of the fifth nerve, together with the sphenopalatine ganglion, with good results.

In addition to these I have seen three cases which have been thus treated by other physicians. One was a man with marked arteriosclerosis and contracted kidneys who did well for a few weeks, then relapsed, and resisted all medical treatment. The second was also a man, who had been a sufferer for twelve years; he received no benefit whatever, and afterward had his Gasserian ganglion removed by Dr. J. William White, with so far excellent results.

The third patient was a woman aged fifty-eight years, with a marked rheumatic family history, who had been a sufferer for ten years. She was much debilitated. There was some atheromatous change in the vessels, and her urine contained an excess of urates. She received no benefit whatever from the treatment, but was afterward relieved by large doses of the salicylates and tonics.*

The results obtained in these cases show that within the limitations detailed by Dr. Dana the treatment is of value and should always be given a fair trial. The results obtained in Case I, a patient of the type in which the treatment has been found to be of most value, were all that could be desired.

The unsuccessful cases were all of a character that had been found by others to be not amenable to the treatment.

A CASE OF FRACTURE OF THE FEMORAL NECK TREATED BY RUTH'S METHOD.

By J. Dutton Steele, M.D.,
Philadelphia.

The patient was a white woman aged fifty-nine years, about 170 pounds in weight, and in fairly vigorous health. On the night of January 21 she slipped and fell upon an icy pavement, and was at once unable to walk and in severe pain. When first seen, within a few hours of the accident, there was eversion of the right foot and leg, inability to

* This case has been reported in full elsewhere. See *University Medical Magazine*, June, 1900, p. 286.

move the limb, pain on movement and upon pressure over the region of the trochanter, and shortening of one inch.

Two days later Dr. Edward Martin kindly saw her in consultation and confirmed the diagnosis of intracapsular fracture of the femoral neck. There was then shortening of two inches, measured from the pelvis to the internal malleolus, no shortening measured from the top of the trochanter to the external malleolus, preternatural mobility, fulness over the region of the great trochanter, pain, and inability to move the limb. The eversion was very marked, and the foot lay flat with the outer surface upon the bed. Dr. Martin advised the dressing recommended by Ruth (*Journal of the American Medical Association*, Aug. 26, 1899). This consists of extension of the leg with traction applied to the thigh to "pull upward and sufficiently forward to overcome the internal pull of all the rotators and adductors, and at the same time raise the lower fragment to its normal level."

Ruth reports seventeen cases of fracture of the femoral neck, of which number he obtained useful limbs in fifteen. The ages of the patients ranged from twenty-five years to extreme old age. The ages of the majority were over fifty years.

A Buck's extension apparatus was applied in the case here reported, with a weight of four pounds, which was increased to eight pounds, and after three weeks decreased to six pounds, as the lighter weight overcame the shortening and was much more comfortable to the patient. A pasteboard splint was molded to the inner surface of the thigh, and lateral traction was arranged to pull outward and forward by means of a four-pound weight. These are considerably lighter weights than those recommended by Ruth, but greater force was not well borne by the patient, who was nervous and stood the confinement but fairly. The extension brought the two limbs to be of equal length. Bran bags were employed to correct the eversion and to obtain immobility.

In eight weeks the following result was obtained: Ability to slightly invert the limb and foot, shortening of a quarter of an inch, no unnatural mobility, and freedom from pain. Dr. Martin expressed the opinion that union had occurred, and the course of events has confirmed this view. By the aid of massage and passive movements she has gradually regained the use of her limb, and now, eight months after the accident, walks without a cane, except upon unusual occasions. The shortening is still but one quarter of an inch. There is, however, some eversion, amounting to about 20 degrees. During the period of treatment it was extremely hard to keep the foot and leg at a proper degree of inversion, as the patient's skin was tender and she was somewhat nervous, rendering it difficult to fix the leg as securely as desired in the proper position.

The dressing recommended by Dr. Ruth has proven so satisfactory in this instance, and the result has been so much better than that usually expected in such a fracture in an elderly woman, that it has seemed desirable to put the case on record.

THE BOTTINI OPERATION.

FREUDENBERG (*Centralblatt für Chirurgie*, No. 25, 1900) states in a paper read before the German Surgical Congress that he has performed Bottini's operation seventy-seven times on sixty-one patients. In a study of literature the mortality is given as about five per cent, failures about six per cent, the remainder being either cured or improved.

He fills the bladder with filtered air and brings his knife to a white heat. In the after-treatment the permanent catheter is dispensed with, unless there is bleeding or violent pain. He holds that failures are mainly due to making too short an incision, and believes that recurrences are rare.

Frisch reports two recurrences and believes that the cystoscopic incisor is worthless.

THE TREATMENT OF METACARPAL FRACTURE.

BECK (*New York Medical Journal*, Aug. 4, 1900) very clearly shows by some admirable Roentgen ray pictures that fracture of the metacarpal bones is often attended by considerable lateral deformity, and this deformity can only be reduced or prevented from returning by elastic pressure. He employs two rubber drainage-tubes of moderate size, which are lightly pressed into the adjoining interosseous spaces, so that they fill them up to a certain extent. They are kept in position by adhesive plaster strips. The whole hand is then surrounded by a moss splint, a material which after being dipped in cold water adapts itself to the contours of the part to which it is applied.

The Therapeutic Gazette

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Leading Articles.

THE RELATION OF CLIMATE TO SLEEP.

There is little doubt that physicians in general have indefinite ideas as to exactly the results which are to be produced by the climatic treatment of disease. They are too prone to say, in a general way, "Go to Colorado," "Go to New Mexico," "Go to Southern California," without a definite conception of exactly what is to be produced by resorting to the climatic influences found in these States. Too often, also, patients are sent to these great health resorts because they have a pulmonary lesion, and yet the physician does not recognize that there are certain other conditions present in the patient which contraindicate such a plan of treatment. It is perfectly useless, for example, to send a patient with pulmonary tuberculosis to the climate of Colorado when he has in addition to his pulmonary lesion tuberculosis of the genito-urinary tract, or is already a sufferer from distinct renal disease. So, too, it is inadvisable to send a patient who is distinctly neurasthenic and who suffers from insomnia to too high an altitude with the idea that he will be benefited; for while, theoretically, such an altitude may be useful in connection with the lesion in his lung, practically his loss of sleep and the general debility which results from the lack of rest produces a condition in which the man is worse than before he resorted to the climatic influence.

We have recently read with much interest a valuable paper upon this subject by Dr. Eskridge, of Denver, and we are desirous of calling the attention of our readers to this article for more than one reason. In the first place, Dr. Eskridge has been for many years in Colorado, and has made himself thoroughly acquainted with the climatic influences which are exercised there upon patients and others who come to that district. In the second place, he has already made for himself a distinguished name in neurological literature, and is recognized as a leading neurologist in that immense district which is west of the Mississippi River. Finally, whatever he has to say in regard to neurological matters in the West where there are healthy altitudes possesses singular interest for us, because having been a resident and practitioner upon the eastern coast, he is well equipped to make a personal investigation in regard to the relative influences of the climate by the shores of the Atlantic, at low altitudes, as compared to those which are found in the lower portions of the Rocky Mountains.

The paper which has interested us is published in the *Denver Medical Times* for June, 1900. In discussing the subject the author divides people into two classes: those who are acclimated and those who are unacclimated, and he tells us that in the nervous who are acclimated, and who seem to react to impressions to which the phlegmatic individual does not respond, sleeplessness is often present in Colorado. He also points out a very important point which we do not think is usually known, namely, that the best way to overcome insomnia in the altitudes of Colorado in nervous persons is not to recommend that they shall take increased physical exercise, but that they shall rest. At first glance one would suppose that by taking an increased amount of physical exercise a person would be so fatigued that sleep would come to the individual, but practical experience seems to show that the more tired the patient becomes, the less likely is he to sleep; and severe exercise will simply defeat the end to which the patient is work-

ing. The rest should not only be physical but mental. In the course of Dr. Eskridge's paper he points out another interesting fact, namely, that the nervous effect produced by the prolonged use or abuse of alcohol in Colorado seems to be much greater than is found at sea level. A person may use considerable alcohol there for a number of years and apparently not suffer a great deal, but sooner or later the time comes when these doses of alcohol, whether they be small or large, will interfere with sleep. So, too, tobacco, if it is used to excess or late at night, is a great cause of disturbance of sleep, especially in the nervous, and to a greater or less extent in all subjects at that altitude. He also thinks that coffee and tea, if used to excess, have a greater influence in interfering with sleep in Colorado than when these substances are used in similar quantities at lower altitudes.

Many of these facts have increased importance when we come to deal with those who are ill and who are unacclimated. The nervous subject suffering from phthisis rarely obtains prolonged and refreshing sleep on going to Colorado unless he is careful to keep very quiet. As a rule he is made especially irritable, and his sleep is disturbed by exercise and excitement. For those nervous persons whose nervousness and insomnia have been produced by overwork, cares, and worry, the climate of Colorado has an especially beneficial influence in securing sleep, provided that the proper precaution is taken to keep quiet on reaching there. As the nutrition and strength of the individual improve, as a rule sleep also comes more readily and lasts longer.

In conclusion, Dr. Eskridge points out that for the majority of tubercular subjects, sleep is worse on coming to Colorado, unless they are very careful to take little or no exercise. After they are accustomed to the change in altitude and have been resting quietly for a considerable period of time, they very frequently sleep better than they did when at home.

An interesting conclusion to his paper is a discussion as to the influence of this climate in regard to sleep upon those who live there perennially. In reply to the question, "Is it desirable for persons who are living in Colorado to go to a lower altitude occasionally to secure better sleep?" he answers that if it is practicable without too much sacrifice, a change of climate should be sought once a year or oftener, according to convenience, but it must not be concluded that patients who become nervous and sleepless are compelled to leave Colorado before they can procure refreshing sleep; for many of these persons have been compelled to live there year after year continuously for periods of fifteen or twenty years, and find that although occasionally they become nervous and sleepless, on the whole they are able to secure a fair amount of sleep. While this may be true, he believes that it is generally considered by residents of the higher altitudes in Colorado that their health is better if they are able to leave there for a few weeks or months at certain periods of the year in order to get a climatic change.

It is important to remember that physicians too frequently tell patients that if they will go to Colorado for a few months, they may return to the East cured of their pulmonary lesion, both temporarily and permanently. This, in a majority of instances, is a vital mistake. The patient who is sent to Colorado for the pulmonary condition of tuberculosis should not be encouraged to return for many months, or indeed for several years; and every physician in active practice in the large Eastern cities will recall cases which have gone to Colorado, have been apparently cured, have returned to their homes, and have speedily broken down as the result of a renewed lighting up of the tubercular process, whereas, had they remained in the high altitude and under the other climatic influences which they find in these health resorts, they might have lived to a green old age, the tubercular lesion in the lung being entirely healed, and kept so by the beneficial influences which produce the primary reparative process.

THE VALUE OF ALCOHOL IN DISEASE AND IN HEALTH.

It is not the purpose of this editorial to enter into an exhaustive discussion of the value of alcohol as a stimulant to the healthy or to those who are dangerously ill, for this subject has been so frequently and exhaustively discussed that no editorial can really deal with it except in small part. We have in previous issues of the GAZETTE expressed our view as to the value of alcohol in the treatment of disease, and we still believe that properly used as to dose, individual, and opportunity, it is, like many other drugs, of great power or infinite value; and on the

other hand, that if it is abused it is capable, just as digitalis and opium are capable, when wrongly employed, of doing a vast amount of harm. Medical and other literature during the past few months has teemed with a somewhat active discussion of this and collateral subjects, the center of the discussion being a recent publication by Professor Atwater, in which he asserted that alcohol might be considered practically as a food.

We publish in our Progress columns this month a comparative table put together by Dr. Hall, in which he attempts to set over against each other some of the demonstrated facts regarding alcohol and food in their relation to nutrition. In the case of figures, statistics, and the statement of definitely ascertained facts with narrow limitations, there can be no doubt that the so-called "deadly parallel column" has very distinct advantages. But in the discussion of a subject in which so many collateral facts must be stated of greater or less importance, it does not seem to us that the parallel column should be used as it is in this instance. For example, it will be seen under the heading of "Food" that the first section states that a certain quantity will produce a certain effect at first, and the same quantity will always produce the same effect in the healthy body. With this dogmatic assertion we can certainly take issue, even when it deals with so simple a substance as a foodstuff.

If the following assertions are read we think that nearly every one of them can be objected to on very much the same grounds, and many of the statements in regard to alcohol seem to us to be equally open to criticism. Thus, statement 7 in regard to alcohol, namely, that it is an excretion, and in common with all excretions is poisonous, seems to us to be contradicted by the remainder of this paragraph, in which it is stated that it may be beneficial in certain phases of disease, but it is never beneficial in the healthy body. If alcohol is an excretion and is poisonous, we do not see how it can ever be beneficial in certain phases of disease.

We are taking issue with these statements not because we wish to assume the attitude of a carping critic, but because we think it important that in the discussion of such a "nice" subject as the one before us, false impressions may be produced not only in the minds of physicians, but also in the minds of the laity. And we can readily understand how persons who are biased in regard to the use of alcohol might quote these parallel columns accurately, and yet give them a far greater importance and weight than perhaps even their author would be inclined to do. In health as well as in disease the knowledge of metabolic change in the body is as yet largely an unopened book to us all, and when a substance like alcohol is added to the metabolic processes, we have still further difficulties added to the subject. Our scientific knowledge in regard to the action of alcohol and metabolism is so wretchedly lacking that the physician is to a large extent forced to base his opinion as to the value of this remedy in health and disease upon the clinical results which he obtains at the bedside rather than upon the results which are obtained in laboratory investigation.

The fact remains that thousands of physicians regard alcohol as being an exceedingly valuable remedy in certain conditions of disease, not only because they have been taught this, but also because experience from year to year has confirmed them in their belief, on the principle that the proof of the pudding is in the eating. Of course, there are certain moral questions which must be met in connection with this subject which it is not our intention to discuss, and it is also certainly a fact that alcohol is entirely unnecessary to the healthy, except perhaps at certain times when by reason of exhaustion or other conditions it is desirable to temporarily produce what we call stimulation.

THE EMPLOYMENT OF ARSENIC IN CHOREA.

Almost every medical man is fully aware of the fact that no drug approaches arsenic as a curative agent in the treatment of chorea, and many others appreciate the fact that to produce the best result this drug must be given up to the point of intolerance, and again that if it is so administered, it now and then produces mild toxic manifestations, chiefly in the form of slight edema of the face, gastrointestinal disturbances, or even a peripheral arsenical neuritis. To the latter effect we have called attention within the last year in these editorial columns, and within the last few weeks we have seen an interesting description of a patented medicine largely employed in England which was found to contain enormous doses of arsenic, and which had an extraordinary reputation as a curative agent in the disease of which we are speaking. Indeed, a large

dose of this preparation is said to have contained twenty or thirty times as much arsenic as is commonly employed by the regular practitioner as a beginning dose. Our attention has still further been called to this interesting subject by an article contributed by Prof. M. Allen Starr, of New York, to the "Festschrift" in honor of Dr. Jacobi on his seventieth birthday. Dr. Starr points out as a result of analyzing 400 cases of chorea which have been met with in the Vanderbilt Clinic that arsenic appears to still be the remedy of greatest value, and that it is a rule to increase the doses of the drug up to the point of physiological effect, and then to reduce them slowly, keeping the child just upon the verge of intoxication by the arsenic. The susceptibility of children to arsenic is very different in different individuals. In two cases severe general neuritis appeared during the course of treatment, although these two children were not at the time taking as much of the drug as was administered without ill effects to many others. Both cases recovered. Antipyrin appears to be the remedy next in value to arsenic, but exalgin, phenacetine, bromide, chloral, and paraldehyde have been tried with very little effect.

Dr. Starr says it appears to him that less dependence is to be placed upon any drug treatment of the disease than upon an immediate change of air and surroundings. He has seen many very bad cases recover almost entirely within two weeks after being sent to the seashore or to one of the country homes of the children's hospitals of this city, when they had resisted treatment for months by all forms of drugs.

THE VALUE OF WARM WATER IN THE TREATMENT OF FEVERS.

One of the errors most apt to creep into our methods of treating disease is the carrying out of a plan as a matter of routine. Some physician of large experience, in whom the profession has confidence, brings forward a plan of treatment, and many practitioners follow him without using the judgment he has used, and so apply his method to cases in which it is useless or even harmful. As a result of this unintentional carelessness reports soon begin to appear in which discouragement is manifest. The statement is made that the treatment is not what it is "cracked up" to be, and a certain proportion of men abandon as useless a plan which really has much to commend it in many cases. Such results are not only regrettable because they retard progress, but also because they illustrate the fact that too often the physician is content to treat all cases in an identical manner, ignoring one of the most important factors in the successful treatment of all diseases, namely, the personal equation of the patient.

In almost every treatise on the Practice of Medicine a definite outline of treatment is laid down under the discussion of each disease, but in reality it can be at its best only applied to a certain number of cases.

Scarcely a disease which is commonly treated can be named to which this faulty method of treatment is not applied, but perhaps no one of them illustrates it better than typhoid fever, a malady originally supposed to follow a most typical course, and now known to be most aberrant in its symptomatology and pathological lesions.

As all of our readers know, the medical literature of the last few years teems with reports more or less glowing about the treatment of this malady by cold baths, and some have gone so far as to recommend their employment in all cases, while others have gone still further and employed them at all times during the course of the disease, whether the patient came under care early or late. Those who really know how the cold bath should be used recognize the fact that it does comparatively little good if begun late in the course of the disease, and often does actual harm, because at this time the system is too feeble to react to the cold application. But it is not so much the exact date in the progress of the malady which should govern us as it is the state of the patient, for one case may be feeble and asthenic at the end of the first week, and another strong at the end of the third week. Manifestly it is not necessary to entirely give up the use of water in the cases in which cold is unsuitable, but on the other hand to modify the temperature of the water so that the needs of the patient may be met.

The cold bath does good by increasing the elimination of toxic material by the urine, by equalizing the circulation, by cleansing the skin, by deepening and improving the respiratory act, by aiding the nervous vital centers to repel the oncoming stupor of the disease, and lastly by reducing temperature. All these things are invaluable, but it is a fact that the means of obtaining them cannot

be used in an identical manner in every patient.

The question then arises, Can approximately good results be reached by modified measures? We have long believed that good results could be obtained in such a manner, and have repeatedly discussed them in our original and editorial pages. At the present time, however, we are desirous of calling attention to the fact that even warm or hot water can often be applied with advantage. The effects of such temperatures are soothing in cases of nervous excitation with a dry, hot skin, associated, it may be, with too great asthenia, or not sufficient pyrexia, to justify the use of the bath. Such a plan is by no means new in the treatment of all fevers, but it has been lost sight of in the "hurrah" for the cold bath. It is important to recall the fact that hot water applied briefly to the skin acts on the capillaries very much as does cold, causing a primary contraction followed by dilatation and hyperemia, and where the surface is mottled and blue and the fever low, it is a valuable stimulant. On the other hand, warm or tepid water is cleansing alone and quite relaxing. Applied to the surface the effect of tepid water on body temperature will be slight, while hot water will probably actually lower it, if it is not applied too long. Given a case with grave depression, capillary stasis, and stupor, too feeble to be subjected to cold, and we would give a hot rather than a warm bath to produce effects often caused by the cold bath when applied to suitably selected cases.

Our attention has been called to this matter not only by experience, but by an article in the *Australasian Medical Gazette* which we have recently published in our Progress columns, and by the reference made to this subject in our Paris Letter in the September issue of this year.

LUMBAR PUNCTURE.

Although it is now many years since Quincke brought before the medical profession lumbar puncture as both a diagnostic and curative procedure, confidence in it from either standpoint is, perhaps justly, limited.

The operation is in itself easy and safe. The patient—usually a child—is required to bend forward with the knees flexed against the abdomen. The fine needle of an aspirating or a hypodermic syringe is then thrust between the spinous processes of the third and fourth lumbar vertebræ, forward and a little upward, directly in the middle line, to a depth of an inch to an inch and three-quarters, when the cerebrospinal fluid may be aspirated; or if the caliber of the needle be of fair size, it will flow away of itself, sometimes when there is inflammation under considerable pressure. Kopts (*Therapeutische Monatshefte*, September, 1900), though originally skeptical as to the value of this procedure, has now practiced it on thirty-three cases. In tubercular meningitis he notes that shortly after the puncture there is a pronounced improvement in the patient, the coma disappearing, the pupil reacting, and the pain often being relieved. This improvement is, however, but transitory. In brain tumors the puncture seemed to do no good. It is in these cases that puncture has so often been followed by immediate death; hence it should be avoided; also in cases of hydrocephalus with spina bifida, since a continuous leakage of the cerebrospinal fluid cannot be prevented.

In the treatment of suppurative cerebrospinal meningitis lumbar puncture was most serviceable, four out of six cases recovering. Netter is quoted as having saved five of six cases by this method, combined with the use of hot baths.

THE TREATMENT OF GONORRHEAL ARTHRITIS.

Though it is true that a more efficient treatment of gonococcal urethritis has lessened the frequency of joint involvement, as a sequel to gonorrhea, this complication in its more serious forms is so obstinate to therapeutic measures and often so permanently crippling, in spite of all non-operative measures, that a consideration as to whether or not better results might be obtained by prompt incision, evacuation of the inflammatory exudate which is distending the joint, and a thorough flushing with an antiseptic solution, is certainly timely.

This treatment is suggested on theoretical grounds by the researches of Wassermann, who holds that in closed cavities gonococci perish for want of an acid medium. In their dead bodies, however, there is a virulent poison which causes local inflammation, fever, and violent pain.

If this teaching be accepted, opening and cleaning the joint is the only logical treatment. Moreover, in the inflammatory material the disintegrated gonococci cannot be recognized.

It will be remembered that König has classified gonorrheal joint affections under four headings, namely: (1) Hydrops articuli; (2) serofibrinous inflammation; (3) suppurative inflammation; (4) phlegmonous inflammation.

The greater number of cases are of the serofibrinous form, involving the smaller joints, transitory, painful, attended by slight fever, but with symptoms so moderate that there is obviously no need for operative interference.

Under such circumstances, even though a large joint be involved, such as the knee or elbow, the most important part of treatment is the cleansing and drainage of the focus of infection. This is nearly always in the prostatic urethra or seminal vesicles, and is best reached by urinary antiseptics by the mouth, prostatic and vesicular massage, nargol instillations one to five per cent, and permanganate irrigations (1:3000–5000), practiced with a short urethral nozzle, the solution being allowed to flow into the bladder, gravity overcoming the resistance of the compressor urethræ muscle. The local treatment should consist in rest by means of a carefully adjusted splint and the application of evaporating lotions—dilute alcohol is perhaps the best, the bandage about the inflamed joint being kept constantly wet with this medicament. Ice-bags are sometimes needed to control the severe pain. Morning and evening the joints should be rubbed with guaiacol-vasogen. On the subsidence of acute inflammatory symptoms, the hot-air bath and massage are indicated.

When the large joints, such as the wrist, ankle, knee, or elbow, become greatly swollen and intensely painful, when muscular atrophy is rapidly developing, there is marked constitutional involvement, and the symptoms are progressive in spite of rest, elevation, and the application of cold. Conservative treatment promises at best a good joint after weeks or months of invalidism and suffering, usually a joint greatly limited in motion, often permanently and completely ankylosed. An incision by relieving tension eases the pain almost immediately. It is usually followed by the evacuation of a considerable quantity of thick, flaky liquid often containing dozens or even hundreds of rice-grain or lima-bean sized masses of partially organized fibrin; or the liquid may be purely serous. All these loose bodies should be evacuated, even though this require a free incision into the joint. The joint should then be flushed with 1:5000 bichloride solution (1:2000 Rubinstein), after that with normal salt solution; then should be drained and splinted. The free discharge ceases in from three to five days, when the drainage-tube may be removed.

The convalescence is counted by weeks instead of months, and in the majority of cases the joint becomes completely mobile. There is of course the danger of infection from without, and such a procedure should be attempted only by a surgeon who is sure of his cleanliness.

The purulent and phlegmonous forms of gonorrheal arthritis are universally recognized as amenable only to operative treatment, which should be timely and adequate. This is much more likely to be the case if it is recognized that every inflammation so severe as to threaten the integrity of the joint is best treated by incision and irrigation without regard to the question as to whether suppuration has or has not taken place.

The clinical evidence as to the value of this method of treatment, gathered from many different sources, is practically convincing. Stewart (*Montreal Medical Journal*, March, 1900) states that in the last four years forty-eight cases of gonorrheal arthritis have been treated in the wards of the Royal Victoria Hospital. Although no deaths occurred, only nine were discharged cured; fully half the cases left the hospital with one or more joints so damaged that complete restoration was not likely to occur. The treatment was conservative, and included the use of the hot-air bath. In contrast to these figures O'Connor (*Glasgow Medical Journal*, 1898, and *Lancet*, 1899) reports ten severe cases all cured by operation; and many other surgeons have reported like results. It seems reasonable to suppose that the earlier an operation is practiced in suitable cases the more prompt and complete will be the recovery.

Reports on Therapeutic Progress

THE RELATION OF ETHYL ALCOHOL TO THE NUTRITION OF THE ANIMAL BODY.

An interesting article is contributed by HALL to the *Journal of the American Medical Association* of July 14, 1900. In closing his paper he says that it is interesting to set over against each other, in parallel columns, some of the demonstrated facts which we

possess regarding alcohol and food in their relation to nutrition.

THE TRUTH ABOUT

Alcohol.	*Food.*
1. A certain quantity will produce a certain effect at first, but it requires more and more to produce the same effect when the drug is used habitually.	1. A certain quantity will produce a certain effect at first, and the same quantity will always produce the same effect in the healthy body.
2. When used habitually, it is likely to induce an uncontrollable desire for more, in ever-increasing amounts.	2. The habitual use of food never induces an uncontrollable desire for it, in ever-increasing amounts.
3. After its habitual use a sudden total abstinence is likely to cause a serious derangement of the central nervous system.	3. After its habitual use a sudden total abstinence never causes any derangement of the central nervous system.
4. Alcohol is oxidized rapidly in the body.	4. All foods are oxidized slowly in the body.
5. Alcohol, not being useful, is not stored in the body.	5. All foods, being useful, are stored in the body.
6. Alcohol is a product of decomposition of food in the presence of a scarcity of oxygen.	6. All foods are the products of constructive activity of protoplasm in the presence of abundant oxygen.
7. Alcohol is an excretion, and, in common with all excretions, is poisonous. It may be beneficial in certain phases of disease, but it is never beneficial to the healthy body.	7. All foods are formed by nature for nourishment, and are by nature wholesome and always beneficial to the healthy body, though they may injure the body in certain phases of disease.
8. The use of alcohol, in common with narcotics in general, is followed by a reaction.	8. The use of food is followed by no reaction.
9. The use of alcohol is followed by a decrease in the activity of the muscle cells and the brain cells.	9. The use of food is followed by an increased activity in the muscle cells and brain cells.
10. The use of alcohol is followed by a decrease in the secretion of CO_2.	10. The use of food is followed by an increase in the excretion of CO_2.
11. The use of alcohol is followed by an accumulation of fat through decreased activity.	11. The use of food may be followed by accumulation of fat, notwithstanding increased activity.
12. The use of alcohol is followed by a fall in body temperature.	12. The use of food is followed by a rise in body temperature.
13. The use of alcohol weakens and unsteadies the muscles.	13. The use of food strengthens and steadies the muscles.
14. The use of alcohol makes the brain less active and accurate.	14. The use of food makes the brain more active and accurate.

AQUEOUS EXTRACT OF THE SUPRARENAL GLAND.

Merck's Archives for June, 1900, contains an article by SOMERS on this subject. He tells us that when it is applied to a mucous membrane, the parts are shrunken and rendered absolutely bloodless, this action being well shown in a case of vasomotor rhinitis—a male, aged eighteen—where the turbinal tissue completely occluded both nasal chambers. Suprarenal was applied, and in five minutes no trace of obstruction existed. It was found that suprarenal solution, when applied to an inflamed mucous membrane, will produce absolute blanching in five minutes, marked action being shown at the end of three minutes. Vansant uses the following formula, which, while satisfactory, does not give the full physiological action:

Boric acid, 11 grains;
Camphor water,
Distilled water, of each ½ fluidounce.

To 1 drachm of this add 5 grains of suprarenal gland, and filter.

The activity of the extract is not impaired by prolonged boiling, and it may be repeatedly sterilized in this manner, while a solution composed of ten grains of suprarenal to one drachm of water, boiled for several hours, and filtered, will remain perfect for one week or more. The following formula used by Ingals will remain undecomposed from three to five weeks:

Suprarenal, 15 grains;
Boric acid, 4 grains;
Cinnamon water, 1 drachm;
Camphor water (hot), 2 drachms;
Boiling water, q. s. ad ½ fluidounce.

Macerate four hours; filter.

This is useful in mild congestions to reduce swelling and contract the peripheral arterioles, but it cannot be depended upon to control hemorrhage or subdue active inflammation. Boric acid will prevent putrefaction from three to five days, in the proportion of twenty grains of suprarenal to a half-ounce of saturated boric acid solution; but while not permanent enough to warrant its use as a preservative, it will retain its properties for several weeks. With this solution bleeding from the nasal septum was controlled immediately and the parts absolutely blanched without the further appearance of a trace of blood. Alcohol in the proportion of one minim to the drachm of the aqueous solution will preserve it for three days; salicylic acid, one grain to the drachm, will in no way alter its value, and the solution may be kept from four to six weeks; and carbolic acid in the same proportion will preserve it for several months and in no way impair the physiological activity.

When it is desired to control inflammation or bleeding and produce anesthesia of the mucous membrane, and as a valuable local application in hay-fever, the following formula will be productive often of marvelous results:

Suprarenal, 20 grains;
Phenic acid, 2 grains;
Eucaine B, 5 grains;
Distilled water, 2 drachms.

Macerate ten minutes; filter.

This solution is permanent, will not decompose nor lose its physiological activity for several months. In a boy of fourteen years, with severe epistaxis, the blood pouring from both nostril and mouth, the solution was applied to the mucous membrane of the nose, and within two minutes all evidence of hemorrhage had disappeared, and what was formerly a bleeding area was completely exsanguinated and the vessels firmly contracted.

As suggested by Wright, suprarenal gland used alternately with orthoform will prove of value in hay-fever and painful congestions with eroded surfaces of mucous membranes. Any of the solutions mentioned may be used to massage the inflamed mucosa, and in a number of cases in which Somers has used this method congestions were readily dissipated and much relief obtained. In the eye it exerts no local or general effect aside from that on the vessels, and this also holds good for all mucous membranes to which it is applied, the astringent, constricting effect being the major action of the drug. When applied to any mucous surface there ensues a constricting and blanching, whether the tissue is inflamed or normal, and the ischemia so produced is more or less complete, depending upon the time and method of application and the strength of the solution used. In a number of individuals of varied ages and both sexes the extract was used to determine the relation between the blanching and the contraction, and in every case it was found that the parts invariably blanch first and then contract immediately afterward. In a number of cases the physiological action was plainly evident at the end of twenty-four hours, gradually passing away and leaving the parts as before; and, dependent upon the character of the tissue, the strength of the extract, and the manner of application, the action lasts from one and one-half to twenty-four hours, commencing within twenty seconds after the drug has been applied, the maximum being attained in five minutes.

Dr. Somers states that the following conclusions are suggested by his experience with this drug in the lower animals, and four hundred and fifty cases in hospital and private practice:

1. The aqueous extract of the suprarenal gland is the most powerful astringent and vasomotor constrictor that we possess.

2. Its action is peripheral, is exerted directly on the vessel walls and basement membrane, and is limited only to the parts with which the drug comes in contact.

3. It is non-toxic, non-irritating, cannot produce a vicious habit, and may be repeatedly used on the same individual without losing its power.

4. It prevents to a marked extent the toxic effects of local anesthetics by retaining them in the tissues and preventing absorption.

5. The aqueous extract readily decomposes on account of the large amount of animal matter present, but the degree of putrefaction in no way impairs the physiological activity.

6. It first blanches and then contracts mucous tissues, and will subdue active or passive inflammation.

7. Its activity is not impaired by boiling, and it may be repeatedly sterilized in this manner, while carbolic acid will preserve the solutions indefinitely and in no way impair their value.

8. It will prevent primary and greatly lessen the danger of secondary hemorrhage.

9. Its action is manifested in twenty seconds, attains its maximum in five minutes, and lasts from one and one-half to twenty-four hours.

10. It increases the tonicity of the parts, augments the action of other drugs, especially cocaine, and diminishes postoperative swelling.

11. It markedly restricts exuberant granulation tissue wherever situated.

12. Finally, it diminishes secretion and aids in more rapid healing.

DANGERS IN THE USE OF PEROXIDE OF HYDROGEN IN THE TREATMENT OF MIDDLE-EAR DISEASES.

The *American Practitioner and News* of June 15, 1900, points out the dangers of using peroxide of hydrogen in ear diseases. It says that the real value of peroxide of hydrogen lies in its power to liquefy and break up pus. In doing this there is a large quantity of gas evolved, and it is essential that this gas have perfect freedom, as otherwise it creates trouble in various ways, the chief of which is the production of pain, caused by distention of the tissues in cases where the gas cannot escape freely.

Probably a more serious trouble is produced by its use in suppurative diseases of the middle ear. The sudden development of a large quantity of gas in the drum cavity frequently forces pus and other débris from the middle ear over into the mastoid spaces.

This is especially liable to occur where the perforation in the drum membrane is not sufficiently large to permit of the ready escape of the gas. This accident occurred twice within a fortnight in the practice of the writer, necessitating opening up the mastoid. Recently a case came under his observation, he says, the next day after the peroxide had been used, and the patient was so frightened by the severe pains in that side of the head, with partial loss of sensation in that side of the face, that he declined to use it again. The writer has long since ceased to use it in suppurative disease of the ear because of the danger of producing mastoid inflammation, and in his clinics advises against its use on that account. It is certain that mastoid inflammations are now much more frequent than they were before the introduction of the peroxide of hydrogen as a therapeutic agent. While it is a valuable agent in some respects, it is certainly a dangerous one to use promiscuously in suppurative diseases of the middle ear. Where the opening is large in the drum membrane, and where the pus is scanty, it may be used, but under all circumstances the head should be inclined well forward and downward, so as to give gravity an opportunity to assist in the removal of the débris. One drachm of the bicarbonate of sodium and ten grains of the permanganate of potassium in a pint of water make a most excellent cleansing and deoxidizing and deodorizing agent for the purpose of cleansing suppurative middle ears. This solution may be used, with an ordinary syringe or a fountain syringe, two or three times a day.

THE TREATMENT OF TETANUS.

LAMBERT, writing in the *Medical News* of July 7, 1900, recalls the fact that during the past two years a new method of treatment recommended by Roux and Borrel has been in vogue, that of the intracerebral injection of the tetanus antitoxin. Roux and Borrel found that by injecting antitoxin directly into the brain substance a peculiar kind of tetanus was caused. Instead of the tetanic spasm and convulsion, there were psychic phenomena of seeming hallucinations, with fear and a furious unrest, polyuria, and violent convulsions. The animals died in these, or became emaciated with crises of convulsions and died later. They found that animals actively or passively immune to tetanus would take cerebral tetanus if the toxin was injected directly into the brain tissue. If the toxin were injected subcutaneously and the tetanic symptoms allowed to develop, the majority of animals could be saved by an intracerebral injection of antitoxin. They believe that the tetanus toxin, when once in the blood, is quickly withdrawn to become fixed in the nerve cells; while the antitoxin remains in the blood and cannot act on the toxin, unless a combination occurs in the blood. The poison is diffused from nerve cell to nerve cell out of reach of the antidote. The antidote should, therefore, be placed where it can act. "The antitoxin carried into the brain protects the upper portion of the spinal cord, although the inferior portion of the cord is already attacked by the poison, but it will not undo the damage done; the contractures established at the moment of intervention persist for a long time. Besides, the intracerebral injections do not save all tetanic animals; if the upper portions of the cord are poisoned, death will not be prevented. There is a time after which antitoxin can do nothing, whatever the method of its employment. The intracerebral injections increase the period of efficacious intervention." These authors also express some doubt as to whether an animal whose tetanus was bulbar from the beginning would be better cured by intracerebral than by subcutaneous injections. Fonseca, repeating the work on rabbits, found intracerebral injections useless in acute tetanus. Blumenthal and Jacob performed intracerebral injections in goats as soon as tetanus symptoms appeared, but without effect.

The writer has been able to collect the records of fifty-two cases of tetanus in which intracerebral injection has been performed. In these fifty-two cases there are nineteen recoveries and thirty-three deaths, a mortality of 63.46 per cent. Dividing them into acute and chronic cases, we have acute, three recoveries and twenty-one deaths, a mortality of 87.5 per cent; and chronic, eleven recoveries and four deaths, a mortality of 26.66 per cent. There are thirteen cases with insufficient data to classify them—five recoveries and eight deaths. Besides the above, in one chronic case subdural injections were made and were followed by recovery, and in two acute cases which died. When we consider that in the majority of these cases intravenous and subcutaneous injections of antitoxin were also made, and comparing these statistics with those without intracerebral injections, we are not favorably im-

pressed with this new method. Borrel claims that after the first twenty-four hours of tetanic symptoms intracerebral injections are useless, and that they are also useless when the pulse is above 110, or the respirations above 25, or if dysphagia or paroxysms of suffocation are present, and in cephalic and abdominal tetanus. But as Roux and Borrel have shown that if even in small animals the superior portion of the cord is affected the animal cannot be saved, and as Ewing has shown that the brain and medulla in man are most affected, and clinically in human tetanus the first symptoms are usually those of bulbar involvement, we do not see any encouragement to continue cerebral injections.

We must realize that in acute tetanus the chances are against recovery; hence, in all severe wounds in regions where tetanus is not uncommon we must consider the preventive inoculations of antitoxin. As was previously reported by Dr. Lambert, Bazy in France, after having four fatal cases of tetanus in one year, has made it a practice to inject ten cubic centimeters of serum into all patients who have come under his care with wounds which caused him to fear tetanus. He did not see a case of tetanus again, although his practice has been in a region notorious for tetanus. He has since reported that in one man in whom the inoculations were accidentally omitted tetanus did develop. The results of Nocard's method of preventive inoculations in veterinary practice are most striking. Among sixty-three veterinarians there have been inoculated 2727 animals with preventive doses of antitoxin, and not a single case of tetanus developed; while during the same periods in the same neighborhoods 259 cases of tetanus developed, in non-inoculated animals.

Lambert says there is no doubt in his mind that many cases of human tetanus could be avoided if these preventive doses of ten cubic centimeters of antitoxic serum were more generally used. In using the serum in man intravenous injections will act much more surely and quickly, and should be given when possible; twenty to fifty cubic centimeters should be given as the first dose, followed twelve hours later by twenty cubic centimeters more. Ten to twenty cubic centimeters should be given every twelve to twenty-four hours later till the spasms cease. In children half the dose should be given. The local and physiological remedies should never be omitted, for it is only by employing every means in one's power that we can hope to overcome the terrible virulence of the tetanus toxin.

THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS.

The Lancet of June 23, 1900, has in it a paper by BURGESS detailing some experiments made by him to determine the relative activity of various antiseptics. The specific germ selected for these experiments was the bacillus coli communis, a bacillus which occurs normally in the human intestinal tract, and in health appears to be innocuous, but which under abnormal conditions may become markedly pathogenic. This bacillus possesses some very distinct advantages for the purpose of this investigation; it is extremely easy to obtain it in large quantity, owing to the profuse nature of its growth on potato; it has many characteristic reactions, by which it can be readily distinguished from other bacilli, and by applying these at different stages in the course of the experiments it is possible to establish the purity of the cultures throughout; while, since it has, for a non-sporing bacillus, a comparatively high power of resistance to germicides, any results obtained with it may be held to apply even more forcibly in the case of other non-sporing bacilli, at any rate such as are pathogenic.

The bacillus was isolated from the stools of a young girl suffering from enteric fever by the method of successive gelatin plates. A pure culture having been obtained, and proved by means of the characteristic reactions to the bacillus coli communis, a stock culture was made on the sloped surface of agar-peptone bouillon in tubes, and from these subcultures on potato were taken as required. These were made on the surface of freshly prepared sterilized potato medium, and were incubated at 37° C. for ten days, when a profuse dark-brown growth, very characteristic of this bacillus, was found to have formed. This was removed with a thick sterilized platinum wire (care being taken not to carry along with it any of the potato medium), and mixed in a sterilized glass capsule with a little sterilized peptone bouillon so as to form a thick emulsion, into which the silk threads were immersed. These threads were cut from the finest "Turner's plaited silk," each being exactly one inch long, and were sterilized in a Koch's apparatus for one and a half hours in Petri dishes, in which they were afterwards dried

and kept till required for use. After immersion in the emulsion for ten minutes the threads were transferred with sterilized forceps to a Petri capsule, in which they were partially dried in the dark at a temperature of 24° C. for three hours by placing them in the "cool" incubator. They were next transferred to the disinfectant solutions to be tested, and after remaining in these for the allotted time were lifted out with a sterilized platinum hook, washed well in sterilized distilled water in order to remove any trace of disinfectant adhering to them, and placed each in a separate tube of sterilized peptone bouillon. These tubes were incubated at 37° C. for ten days, being examined each twelve hours for the first forty-eight hours, and after that daily. If no growth occurs, the bouillon is perfectly clear at the end of this time; if it does occur the bouillon begins to show signs of turbidity at a period varying from twelve hours, or even less, to seventy-two hours. The presence or absence of growth is further shown by microscopical examination, and by the inoculation of gelatin plates. If no growth had taken place at the end of ten days, it was concluded that all the bacilli present on the thread had been killed by the disinfectant solution. In every case a control experiment was made precisely as above, except that sterilized distilled water replaced the disinfectant solution, and in each instance growth was found to be present at the end of twelve hours.

Objection may possibly be raised to the above method on the ground that some of the disinfectant solution might be carried over on the thread into the bouillon, and so, by its antiseptic or inhibitory action, prevent the development of bacilli in the thread which were not actually killed by it. To guard against this, the threads were, as already stated, well washed in sterilized distilled water after removal from the action of the disinfectant, and as a further precaution all those tubes which exhibited no growth at the end of ten days were reinoculated from an emulsion of bacilli prepared as above and again placed in the incubator. In every such case growth occurred at the end of twelve hours, thus proving that the bouillon in these tubes was still a suitable medium for the development of the organism, and that their previous sterility was due, not to any transferred disinfectant, but to the fact that all the bacilli on the thread had been completely destroyed.

In order to establish a fair comparison between the germicidal effects of the various disinfectants tested, Dr. Burgess says he decided to allow the threads to remain in solutions of them for certain definite lengths of time, and to ascertain the weakest strength of any given disinfectant which would destroy all the bacilli on the threads in these times respectively—viz., one minute, five minutes, ten minutes, thirty minutes, and one hour. For each strength of a disinfectant solution acting for a given time (*e.g.*, carbolic acid 1 in 20, acting for five minutes) six threads were used, each being subsequently placed in a separate tube of bouillon and incubated. In by far the majority of cases the result was the same in each of the six tubes, either positive or negative, showing that every care had been taken to prevent contamination of the threads in the process of transference from the disinfectant solution to the bouillon tubes. But occasionally, when approaching the limit of the germicidal power of the particular strength of disinfectant used, there was some discrepancy—*e.g.*, five tubes might give a positive and one a negative reaction, or *vice versa*, in which case the verdict of the majority was taken to be the correct one. If, however, the discrepancy was more than this—*e.g.*, four and two, or three and three—the experiment was repeated with a second set of six threads, and the majority was taken.

The following substances were tested: biniodide of mercury, perchloride of mercury, chlorinated lime, formaldehyde, lysol, carbolic acid, izal, medical izal, creolin, Jeyes's sanitary fluid, Walker's I. X. L. disinfectant fluid, Condy's fluid, "sanitas" fluid, and boric acid. These experiments involved the inoculation and culture of some 2000 tubes of bouillon, and were conducted in the laboratory of the Manchester Union Hospital, Crumpsall, during six months of Burgess's tenure of the resident medical officership there.

In interpreting these results Burgess wishes it to be clearly understood that they are merely relative and can only be held to be absolute under the exact conditions laid down for these experiments—*i.e.*, where the bacilli are freely exposed to the action of the disinfectant in solution, no albuminous matter being present. In the actual practice of disinfection such conditions are never met with, the most important difference being the presence of albuminous material in greater or less quantity. Especially does this apply to the case of perchloride of mercury, which

forms a definite combination with albumin, resulting in the formation of a comparatively inert albuminate of mercury, and thus, to maintain its efficiency, the strength of the solution would require to be increased in proportion to the amount of albuminous matter present.

Biniodide of mercury was brought into solution by the addition of iodide of potassium in quantity just sufficient to dissolve it, a stock solution of 1 part of biniodide in 500 of distilled water being first prepared, from which the more dilute solutions were afterwards obtained by the addition of the requisite proportion of ordinary tap-water. The germicidal power of this drug is far superior to that of any other used in these experiments, and as it does not precipitate with albumin the results obtained should hold good even in the presence of albuminous material, thereby contrasting with the perchloride of mercury.

Chlorinated lime (commonly called "chloride of lime") is a white powder which is only partially soluble in water, and after standing for a little the insoluble portion falls to the bottom. This was kept in suspension in these experiments by frequent shaking of the glass vessel containing the threads immersed in the solution, but the germicidal power was not in any way altered by previously filtering the solution so as to remove this insoluble portion. In the stronger solutions of this substance not only are the bacilli on the threads all killed, but the threads themselves are destroyed, and in a short time almost all trace of them disappears.

Formaldehyde solutions were prepared from Schering's formalin, which is a forty-per-cent solution of formaldehyde in water, the latter itself existing in the gaseous state.

Izal and medical izal, two coal products, are prepared by Messrs. Newton, Chambers & Co., the latter being a refined preparation of the former specially adapted to medical and surgical use. He found no difference between them as regards their germicidal properties.

Boric acid has no claim to be regarded as a disinfectant, since its saturated solution failed to destroy the bacillus coli communis in any of the allotted times.

MERCURY IN HEART DISEASE.

The *Medical Press and Circular* of June 27, 1900, points out that in many cases of heart disease the most pressing demand on the skill of the medical attendant is the necessity of reenforcing cardiac contraction and of reducing the amount of work thrown upon that organ. The attention devoted to the fulfilment of the first of these two requirements seems in many cases to result in a very perfunctory attempt being made to arrive at a successful issue in the direction of the relief of the heart from work. The soluble preparations of mercury do more than act as purgatives, increasing intestinal mucous secretion and enforcing the contractions of the muscular coats of the bowel, for they exert a further action on the system of arterioles and capillaries. The connection between this collateral action of mercurial purgatives and the relief they afford to the engorged heart is undoubted, but its therapeutic significance is nowadays neglected in a large number of cases. There is reason to believe that the usual methods of administering mercury result in the drug assuming but one form only in the blood, and its elimination has certainly been traced in all the secretions, physiological and pathological; its area of effectiveness is therefore widespread, and one notable benefit derived is the reduction of arterial tension, thus lowering the peripheral circulatory resistance and easing the cardiac stress. The ingenious hypothesis that mercury acts on the chemical conditions of the liver and aids in the elimination of certain impurities in the blood which tend to heighten capillary resistance is certainly satisfactory as far as it goes, but in an urgent cardiac case, when by mercury the medical attendant has reduced the swollen liver by depletion of the portal system, and diminished the arteriocapillary tension, the refreshing sleep that often follows is a far more encouraging fact. The diuretic effect of mercury in the treatment of heart affections is now beginning to receive the support it merits, and it is astonishing how the intelligent exhibition of mercury in suitable cardiac cases, combined with the well known heart tonics, will enable a practitioner to tide his patient over many an otherwise alarming illness.

ERYSIPELAS AND ITS TREATMENT.

The *Physician and Surgeon* for July, 1900, has in it an article by CARRIER, in the course of which he points out that the erysipelatous coccus is a great heat producer, and we find high temperature in cases that are not at all

severe, and even in the mildest cases a marked rise, which will aid in distinguishing the process from the erythemata with which it is so often confounded. Healthy blood we regard as bactericidal, and competent to destroy within certain limits pathological germs which may enter the circulation. Previous conditions to an attack of erysipelas have so vitiated the blood-current that it is unable to cope with the coccus, and the disease develops. Treatment, then, must be directed to a restoration to the normal of this circulating fluid, while at the same time measures and medications are employed to destroy the germ and hasten the elimination of its toxins. The constitutional treatment of erysipelas medicinally has varied with the individual practitioner, and each has found his method successful, a very good evidence that the disease is self-limited, and but little influenced by internal medicines. A few remedies, however, have seemed in the hands of many reporters to have exerted a favorable influence over the course of the disease. He names them in the order of their value: tincture of iron, quinine, pilocarpine, and hyposulphite of sodium. The action of these four remedies is bactericidal. If in the constitutional treatment of the disease there has been a great variety of remedies used, local treatment has shown a greater variation, and each reporter has been much gratified with the success attending the use of his applications or methods.

Remembering that the mortality of erysipelas is low and that the mild cases will recover without any medication, internal or local, we are furnished with an explanation of the apparent value of such varied treatment. Remembering that the disease is infectious; that it is due to a specific germ; that its course is limited, lasting for a week or ten days, and that when it extends beyond the eighth day complications have probably occurred; that even the mildest cases are at any moment liable to become the most grave; and knowing that the germ will not thrive in a low temperature—we are furnished with indications for a successful therapy.

Isolation of a case of erysipelas is a necessity for two reasons—to give the patient the benefit of an unvitiated atmosphere, and to prevent the infection of others. This is easy of accomplishment in private practice, but sometimes difficult in hospitals, where erysipelas cases are often kept in the medical wards devoted to the treatment of chronic cases. Patients when isolated can also be kept in a low temperature, a matter that he thinks is very important. Plenty of fresh air is needed, and open windows and doors will work no harm to a person sick with erysipelas. The temperature should not be over sixty at any time. He is positive that he has seen improvement in cases immediately upon the removal of too much bedclothing, the admittance of fresh air, and the lowering of the temperature of the room from eighty to sixty or less.

Remembering the profound impression that is made upon the nutrition, the closest attention must be given to the diet. Nourishment from the very first must be given regularly, and as often as every two hours. Complications are very liable to occur, and the patient who has been properly nourished during the first of the disease is much better prepared to resist this additional drain. The food should be concentrated, and easy of digestion and assimilation. With a high temperature liquids are preferable. If Carrier were compelled in any case to give preference either to forced feeding or the internal administration of medicines, he should by all odds use the feeding. Many of our cases come from that walk of life where they have not been able to get enough of proper food previous to the attack, and their nutrition needs close attention.

Carrier does not believe that there is any routine treatment in the way of internal medication that should be adopted with the expectation that it will cut short the process. He is aware that numerous reports of the treatment by the tincture of the chloride of iron alone have seemed to show that it exerted a favorable impression upon the affection, and yet these cases only show a moderate gain in percentage over those treated by various remedies, taking the average rate of mortality of all cases of the disease, and he is inclined to the belief that the gain was more apparent than real, for we know that the disease is variable in its severity in different years or decades. An objection that he has to the use of iron in the doses that are given is the liability that exists of interfering with the digestion, and this objection holds good regarding quinine and hyposulphite of sodium. His treatment internally would be, then, symptomatic, and nothing for its influence in controlling the course of the disease. He regards the various antipyretics as worse than useless; they

are harmful. It has been stated that the coccus is a heat developer, and the high temperature is best combated by cold, and preferably by its application to the diseased surface, where we will get the refrigeration reducing the bodily temperature, while at the same time we get direct results in the infected patches by the known influence of cold upon the coccus. A small surface will not furnish room for refrigeration, so while the ice-bag may be applied here, it will be necessary to use cold sponging of the body as well. Cases previously debilitated may require stimulation, and he prefers strychnine and black coffee to the alcoholics, getting a more lasting effect upon the heart in the use of the former, and with less interference with the stomach.

A point that is well to be remembered is the fall of temperature that occurs in some cases between the eighth and tenth day. He has seen it fall to 95°, and without any other indication of collapse; but this fall must be promptly met with strychnine. He usually directs that it be given hypodermically at once the fall becomes subnormal, in doses of one-eighth grain, and repeated every two hours until normal temperature is reached.

There is a feeling of tension, smarting, burning, or itching, and tenderness in the patches that is very distressing, and for the relief of which have been recommended remedies without number—lotions, powders, ointments, sedatives, astringents, stimulation, etc. —which is due to the fact that they form a protective covering from the atmosphere. A cold calamine lotion, to which has been added a little carbolic acid, applied frequently until a deposit of the calamine covers the surface, will serve the purpose as well as any.

Measures to prevent the spread of the disease are also numerous. Germicides locally will probably have little influence in limiting the size of surface attacked.

It has seemed to Carrier that when the lesion was upon a part where strapping could be used, such as the arm, for instance, he has seen some good results in limiting the spread of the disease by a band of rubber or ordinary tape, encircling the part tightly enough to interfere with the flow of the lymph, but these cases have been those in which the subcutaneous tissues were only slightly affected; and when we remember that the coccus seeks the deeper structures it will be seen that it would be impossible to exert enough pressure to effect any good here. Painting by iodine or nitrate of silver he thinks of little value. If we could cause an absorption of a germicide through the epidermis good results might follow the bichloride lotions. The attempt has been made to prevent the spread of the disease by hypodermic injections of some germicide, as carbolic acid, or mercury bichloride. He has a limited experience only, he says, with the acid (two cases, one an inebriate). In these a number of injections were made around the border of the patch, but without any influence upon the spread of the lesion, and with the effect of causing small abscesses at the site of the operation.

The effect of a low temperature upon the coccus has already been referred to, and Carrier believes that cold is the best of all local applications for the treatment of erysipelas. An ice-bag upon a patch of erysipelas relieves the subjective symptoms, while at the same time exerting a curative effect upon the process by interfering with the growth of the coccus. It causes no discomfort, and may be kept almost constantly upon the part, and the cold penetrates to the deeper structures, exerting its influence there, which cannot be said of any other local application. A lanolin mixture of ichthyol he has used frequently, and has thought it was of benefit, but in most of his cases he has used the ice-bag at the same time, so is unable to state its value. The serum treatment so much in vogue at the present he has only used in a few cases, and thinks he is unable to pass judgment upon its merits. He obtained no benefit from it whatever.

It is a matter of the greatest importance that the swollen eyelids be opened often, and the eye washed with a boric acid solution. The eye becomes very quickly affected in erysipelas of the eyelids, and unless treatment is instituted early, and is energetically pursued, disastrous results, as sloughing of the cornea and total blindness, will ensue. The eyes must be seen even if it is necessary to relieve the swelling of the lids by the knife. Two cases have come under his care wherein loss of sight was undoubtedly the result of non-attention to this injunction. In one the eyes had been closed for four days, and in the other for one week, and when they came under his care examination showed sloughing of the cornea, and total destruction of sight. Fortunately both patients died.

The ear also requires close watching in facial erysipelas. One of the complications

that is liable to occur, but fortunately does not occur often, is edema of the glottis. Prompt treatment here is the price of life.

THE IMMUNIZING CURE OF HAY-FEVER.

Upon this very interesting topic CURTIS contributes a paper to the ***Medical News*** of July 7, 1900. He thinks it possible to immunize persons against hay-fever, and states that he has several cases on record of goldenrod and lily-of-the-valley corasthma which have been cured by the *Solidago odora* and *Convallaria majalis* in three or four days, but while these are interesting as contributive evidence, the old enemy ragweed is the recognized king of pollens, whose term of office begins on the 12th to the 20th of August, in these latitudes, and whose cruel reign is only ended by the first frost. He says that if his theory that this rhinitis vasomotor periodica or corasthma ambrosia may be prevented by giving from two to ten drops of the tincture or fluid extract of *Ambrosia artemisiæfolia* three times a day in water, during the two weeks preceding the paroxysm, is correct, he will consider that he has heralded with becoming modesty what he believes to be a great discovery. If, on the other hand, the results he has obtained are not verified by others, he can only say that greater men and more scientific observers have been misled by initial results that time did not substantiate. He would be pleased, however, to give to any physician who will conscientiously aid him in investigating the subject such directions that he may experiment for himself upon severe cases, in order that a collection of reports from disinterested physicians in widely separated localities may be of benefit to the cause of scientific research.

GELATIN AS A HEMOSTATIC.

SCHLESINGER gives a long account of the introduction and use of gelatin as a hemostatic (*Centralbl. f. d. Grenz. d. Med. u. Chir.*, 1900, Bd. iii, 209). In 1896, Dastre and Floresco found that intravenous injection of a gelatin solution in animals caused the blood to coagulate more rapidly when withdrawn from the vessels. Control experiments proved that this is not due to the well known "setting" properties of gelatin. They also found that it antagonized the power of peptone in hindering coagulation of the blood. Camus and Gley explained the result by attributing it to the acidity of the gelatin solution; but Floresco, while admitting that the acid reaction has a certain influence, showed that neutralized gelatin is also active. Bauermeister explained it by an action in the leucocytes which are killed by the gelatin, and in dying produce the ferment which brings about blood coagulation. When injected subcutaneously the same effect is observed, but there is still much uncertainty regarding the rate and method of its absorption.

Carnot treated a severe case of epistaxis in a hemophilic by the injection of a five-per-cent gelatin solution into the nostril, and the bleeding stopped almost at once. A second similar case was successfully treated by means of a ten-per-cent solution. Many other forms of external hemorrhages can be controlled in the same way or by means of tampons soaked in the solution. Carnot says the gelatin must be carefully sterilized, which is best accomplished by heating it to 100° C. on two successive days. The flask can then be plugged, and on steeping it in warm water its contents become fluid, and are ready to use. For local application he uses a five- to ten-per-cent solution in 0.7-per-cent salt solution. Sirdey has also used it locally in metrorrhagia, bleeding from piles, epistaxis; and successful cases have been reported by others. Its action is rapid and lasting, and without danger. Poliakow reports a case of hemorrhage from gastric ulcer, in which six ounces of a ten-per-cent solution given thrice in twenty-four hours stopped the bleeding. Bleeding from the lower bowel can be controlled by injections. Hemoptysis does not seem to be much benefited by its internal administration.

Nogues has treated cases of vesical bleeding by injections of gelatin solution into the bladder. The viscus is first thoroughly washed out with boric lotion, and then several small injections of a five-per-cent gelatin solution are given; the bladder is again washed out, and is ultimately left partially filled with it.

The subcutaneous injection of gelatin to stop hemorrhage was first used by Lancereaux and Paulesco. Cases of hemoptysis, hemophilic bleedings, and bleeding from toxemia can all be treated in this way. Several physicians have used with success a two-per-cent solution in hemoptysis, in bleeding from the bowel in typhoid, and in hemophilia. As a rule, about six ounces is injected daily for several days in succession. In obstinate hem-

orrhage after various operations it is also effective, and it has controlled in several cases the bleeding of purpura hemorrhagica.

In cholemic bleedings Kehr states that three or four injections suffice to control the tendency to hemorrhage. His conclusions are: (1) A solution of gelatin increases the coagulability of healthy and pathological blood. (2) This occurs after local application and subcutaneous administrations. (3) It is harmless if antiseptic precautions are carefully carried out. (4) It can be used in all cases of bleeding from the most various causes. (5) Its value as a prophylactic before operation can only be established after further experience. (6) For subcutaneous injection a one- or two-per-cent solution is best; for local application, a five- to ten-per-cent solution at a temperature of 98° to 100° F. (7) It must be sterilized. (8) Heart and kidney disease contraindicate its use.—*Edinburgh Medical Journal*, July, 1900.

THE THERAPEUTICS OF DISORDERS OF MENSTRUATION.

MACNAUGHTON JONES, in the *Edinburgh Medical Journal* for July, 1900, with regard to internal medication, only alludes to some special remedies, with many of which he has personal experience. He says we are indebted to Dr. Murrell for urging the use of senecin, the extractive of *Senecio aureus*, both in cases of amenorrhea and dysmenorrhea. The dose is from two to six grains. It may be given alone, or, according to indication, with hydrastis or hydrastine. The latter drug he has found useful in congestive and spasmodic dysmenorrhea, the more so if combined in administration with the bromides. *Piscidia erythrina* may be given in combination with both hydrastine, or extract of hydrastis, and extract of viburnum, in doses of from one to two grains, in dysmenorrhea and menorrhagia. The use of the *Hydrastis canadensis* in atonic vascular states of the uterus has now become so universal as to need little comment. Its crystalline active principle, hydrastine hydrochloride, is one of our most valuable astringents in uterine hemorrhage, either as a consequence of hyperplastic enlargements, congestion, hypertrophic or fibrous states, or in simple menorrhagia. A form he has found most useful is: hydrastine hydrochloride ⅓ grain, ergotine ¾ grain, cannabin tannate ½ grain, stypticin ¼ grain, which can be conveniently given as a palatinoid. Sculcopine is a colorless extract of *Hydrastis canadensis*, containing hydrastine, and is equivalent in strength to the fluid extract of *Hydrastis canadensis*. For metrorrhagia, with spasmodic dysmenorrhea, the *Salix nigra*, or black willow, has been recommended strongly, and in neuralgic pains associated with ovarian hyperesthesia. Cornutin hydrochlorate has been used in menorrhagia, alone or in combination with ergot, and in various forms of uterine hemorrhage. Its dose, hypodermically, is one-twelfth to one-sixth grain. Cimicifuga will be found serviceable in menorrhagia or metrorrhagia arising out of uterine subinvolution. It and its active principle cimicifugin are sometimes efficacious in amenorrhea and dysmenorrhea attended by ovarian neuralgia. Viburnum, alone or in combination with caulophyllin (the glucoside from *Caulophyllum thalictroides*), is useful both in amenorrhea and dysmenorrhea, more particularly if either be due to some accidental cause, such as chill or shock.

The value of apiol as an emmenagogue is well known, but its action is variable. Of its two varieties, brown and green, the latter appears to be the most active. Jones has frequently given apiol, together with caulophyllin, with advantage. The extract of *Aletris farinosa* may be combined with viburnum or caulophyllin in dysmenorrhea and amenorrhea, and a combination that he has often given is the extracts of viburnum and aletris, with caulophyllin and belladonna. The action of manganese dioxide, especially in combination with ferrous carbonate, in amenorrhea complicated with anemia is undoubted. The iron may be given separately, or with arsenic and quinine. An admirable combination that may be administered in pill, while the dioxide is given in capsule, is that of dried sulphate of iron, quinine, extract of nux vomica, and arsenous acid. Hemoglobin also, in anemic amenorrhea, should be administered with the dioxide of manganese. Borax, on several occasions, he has had success with, and it is to be recommended with the bromides for epileptiform seizures at puberty, when the catamenia are either delayed or suppressed. He has tried santonin as an emmenagogue, but cannot say much for its efficacy. Castor has been lauded in dysmenorrhea; he has found it of much value. Monobromate of camphor, where there is distinct ovarian pain, may with benefit be combined with other remedies.

The changes have been rung on all the preparations of the coal-tar series for the pain of dysmenorrhea. As Jones has said,

he believes antipyrin or phenalgin in combination to be the best. Several combinations he has found most beneficial, such for example as liquor sedans; it is a useful tonic which can be given with iron and other preparations to those who are debilitated by excessive losses or suffering. Indispensable in those cases both of amenorrhea and dysmenorrhea in which we have cardiac irregularity, enfeebled action, mitral stenosis (or at times in aortic stenosis), in the absence of compensation, are the vascular tonics, strophanthus and digitalis. They can be given in menorrhagia and metrorrhagia with hydrastis and ergotine. Digitalis has the great advantage of its action in producing contraction of the arterioles, and is well given with the tinctures of aletris, viburnum, or hydrastis, and with ergotic or sclerotic acid.

With regard to sedatives or hypnotics for the pain of dysmenorrhea, there is one drug, the use of which is attended, especially in that class of patients denominated "hysterical," "neurotic," or "neurasthenic," lymphatic girls or women, subject to neuralgia, spinal neuropathies, or neuromimeses, with special danger, namely, morphine. Many women have been made by it confirmed morphinomaniacs. Possessed of a hypodermic syringe and a prescription, they resort to morphine not only before and during the period, but in the intervals. Codeine, exalgin, butylchloral hydrate, with the bromides, may be used as substitutes. If morphine has to be given, it would be better by means of suppositories; and, administered in the same way as a hypnotic, trional answers well. The use of an internal remedy may be assisted by depletion and counter-irritation, or any of the numerous modes of applying, either to the abdomen or by the vagina, local sedatives. The most useful pigment that Jones knows of to use over a neuralgic ovary is: Extract of belladonna 2 drachms, camphor 2 drachms, mastic 3 drachms, chloroform and tincture of aconite of each 2 ounces; while in congestive ovaritis the application of iodine pigment (iodine 1 drachm, mastic 1 drachm, and rectified spirit 1 ounce) is an admirable counter-irritant.

PURULENT OPHTHALMIA IN CHILDREN AND ITS TREATMENT.

Percy Dunn writes in the *West London Medical Journal* for July, 1900, that as far as local treatment is concerned, there are, in his experience, three preparations which fulfil every requirement in this regard: (1) A solution of nitrate of silver, of the strength of one grain to the ounce of water; (2) a solution of sulphate of zinc, of the strength of two grains to the ounce of water; and (3) a simple ointment, the unguentum cetacei. With regard to the first, it has been his custom for many years never to use a nitrate of silver solution of greater strength than that which he has mentioned; and as this practice is somewhat at variance with that of other surgeons, he explains his reasons for resorting to it. By using a solution of this strength the parents of the infants can be entrusted to carry out the treatment for themselves. Moreover, no harm can be caused by the use of such a solution, and its effects can readily be regulated by the frequency with which it is ordered to be applied. The great utility of nitrate of silver in these cases depends (1) upon its potency as a germicide, and (2) upon its qualities as an astringent. The principle, therefore, of this treatment is to maintain a steady and continuous influence of the germicide upon the conjunctival sac.

Given an ordinary case of purulent ophthalmia, Dunn's instructions to the patient are to pour some of the nitrate of silver drops into the affected conjunctival sacs every time that the clock strikes, day and night, until seen again. The mention of the clock helps to remind the parent of her duty and responsibility, for he always makes a point of impressing upon her that failure to carry out the exact instructions would probably end in the occurrence of blindness in her offspring. In addition to the drops, the parent is instructed to cleanse the conjunctival sacs as often as the discharge collects by means of a soft piece of linen soaked in the solution of sulphate of zinc. The zinc lotion is used on account of its quality as an astringent, and the effect of the continuous use of the astringent is to keep the swelling of the palpebral and bulbar conjunctiva under control, and at the same time lessen the breeding-ground of the gonococci. Lastly, orders are given to keep the lids smeared with the ointment. By this means the lids are prevented from adhering, and their integument is protected from the irritation which might arise from the frequent application of the remedies during the progress of the treatment.

The effect of all these measures is first of all to reduce the amount of the discharge, and then to alter its character. In the course of a few days or less the discharge loses its purulent form and becomes seropurulent.

As soon as this takes place, the vigor of the treatment may be relaxed. The nitrate of silver drops may be used every four hours, to be afterwards employed three times daily, and the sulphate of zinc solution will be much less frequently required. Generally speaking, the advent of the seropurulent stage means that the case will quickly be well.

Occasionally it may happen that only one eye is affected. When this is the case, the surgeon should at once take steps to cover over the healthy one with antiseptic dressings, to be maintained until the fellow eye is well.

A few words may now be said with respect to the complications and sequels of purulent ophthalmia.

The most important complication is undeniably that of ulceration of the cornea. In the great majority of cases this takes place before the patients come under treatment. The destructive process varies, of course, in different cases. Sometimes there may be only one small patch of ulceration at the corneal margin, or the ulcers may be multiple, or again they may have coalesced and passed on to perforation, involving nearly the whole of the cornea. The possibility of such a contingency occurring renders it very necessary for the surgeon to examine each case with the greatest care when he sees it for the first time. The use of force, in order to overcome the resistance of the child under such circumstances, or when the ulcer is nearly perforating, might lead to the expulsion of the lens and vitreous, and collapse of the eyeball.

What treatment is called for when there is ulceration of the cornea? The following method is that which he has found to yield most satisfactory results: The nitrate of silver drops must be employed as in an uncomplicated case, but instead of using the sulphate of zinc solution, he substitutes for it a one per-cent solution of boric acid, on the ground that the latter is less irritating to the ulcerated corneal surface than the former. In addition, thrice daily eserine drops are instilled of the strength of half a grain to an ounce of water. Whatever the action of the eserine may be, either as helping to reduce the tension, or as proving useful as an antiseptic, as some have asserted, there is no doubt that it is of service. Another complication in connection with purulent opnthalmia, which of late has attracted a good deal of attention, is that of arthritis, and a good *résumé* of the cases published thereof appears in an excellent and thoughtful paper which was read by Dr. Drummond Robinson at the Obstetrical Society last year, on "Vulvar Discharges in Children."

A STUDY OF THE PHYSIOLOGICAL ACTION OF PHENACETINE.

H. C. Wood, Jr., and H. B. Wood contribute to the *University Medical Magazine* for July, 1900, a paper with this title. As they point out, when we consider the length of time which phenacetine has been in use and how valuable clinical experience has shown it to be, the paucity of knowledge concerning its physiological action seems remarkable. The number of investigators who have even made a pretense of a scientific study of it might be counted on the fingers. The earliest account of experiments with phenacetine on the lower animals which we have been able to find is that of Hinsberg and Kast. These observers found that doses of 0.2 gramme per kilo of body weight were without any apparent effect on dogs. Larger doses caused dyspnea, drowsiness, vomiting, a staggering gait, and, when sufficiently large, alteration in the blood—the appearance of methemoglobin. Ott found that phenacetine lowered temperature in febrile conditions, independent of any action on the circulation, by lessening the production of heat.

Mahnert failed to obtain any symptoms in the frog after subcutaneous injection of the drug, probably because the drug was not absorbed. In the rabbit he found that one gramme per kilo of body weight caused toxic symptoms similar to those found by Hinsberg and Kast, and that three grammes killed apparently by respiratory paralysis. In the fatal cases there was a loss of reflex action due to disturbances in both sensory and motor areas. As the neuromuscular apparatus remained intact until death, he justly concluded that the paralysis was spinal.

The most extensive studies of phenacetine are those of Ledoux. Unfortunately, however, this experimenter employed a solution of phenacetine containing nearly ten grammes of alcohol for one of phenacetine, and some of his results, especially those on the circulation, are probably more justly attributable to his menstruum than to the drug. He found in the frog that the hypodermic injection of phenacetine caused the appearance, after several days, of paralysis, the lessened motor power being, however, preceded by a brief period of exalted reflex activity. There was

some diminution in this excitability of the nerve, but not enough to account for the paralysis. The frog's heart *in situ* was not affected either as regards rate or power. In mammals an amount of his solution representing 0.5 gramme (containing also three grammes of alcohol) per kilo of body weight caused a fall of blood-pressure and depression of respiration.

According to Müller phenacetine is broken up in the system, losing its acetyl radical, and is eliminated as phenetidin. This change must occur after its absorption, since neither the gastric nor pancreatic secretions decompose phenacetine. We may call attention here to a fact that we have never seen elsewhere noted, viz., that a solution of phenacetine undergoes in the air after several weeks a spontaneous decomposition, showing the reaction of phenetidin to ferric chloride and carbolic acid. The few experiments made by the authors with such decomposed solutions indicate that they are not perceptibly more toxic than pure phenacetine.

One of the greatest difficulties in the way of studies with phenacetine is its slight solubility in water (about 1 part in 200). As noted above, Ledoux, the only investigator who obtained positive results from its subcutaneous administration, employed an alcoholic solution. The authors were unable to introduce sufficient phenacetine hypodermically to poison a frog, but they found that if the batrachian was allowed to remain in a saturated aqueous solution, enough of the drug was absorbed through the skin to cause death. The first distinct manifestations, under these circumstances, of the action of phenacetine were a sluggishness of movement and loss of power, which appeared in about two hours. In one or two experiments there seemed to be a slight motor excitation preceding the depression, but it was never so distinct that it might not be attributed to extraneous causes. The muscular weakness became steadily more marked until complete paralysis, and finally, if left in the solution, after about four hours the heart ceased pulsating. As the motor nerves remained intact until death, and, indeed, for some time after, the paralysis must be of spinal origin. Where one sciatic was stimulated with a strong electric current there was no contraction on the other side, as would normally occur. This also points toward a paralysis of central origin, although it might, of course, be due to loss of conductivity of the afferent fibers of the nerve.

To determine more positively the effect of the drug on the motor nerves, nerve-muscle preparations were made, and the nerves of another set allowed to soak in the saturated solution of phenacetine in normal saline. Not even in these experiments was there any distinct loss of power of either nerve or muscle, although there was in some of them, after prolonged exposure to the drug, perhaps a more rapid loss of electric excitability than would occur in similar preparations kept in simple salt solution.

In studying the effect of phenacetine on the circulation, the authors employed a mixture in which the drug was merely suspended in a 0.7-per-cent salt solution. This they injected into the jugular vein of a dog. Any ordinary amounts of phenacetine had absolutely no effect on the blood-pressure, nor indeed did the largest dose have any marked action. Doses of 0.5 gramme per kilo of phenacetine, however, caused death from respiratory failure. It is possible that this respiratory failure was caused not by the drug directly, but by the lodgment of a solid particle in a capillary of the medulla, although this is rendered very improbable by the fact that every lethal exit was from respiratory failure, and at no time was there seen any convulsion or other symptom indicating thrombosis in other vessels. Although there was no marked alteration in either pulse or blood-pressure, it would seem that the circulatory apparatus was lessened in its power, because, in the first place, there was not the rise of pressure normally seen in asphyxia, and, again, in the later injections there occurred a temporary fall of pressure after each injection of the drug.

These experimenters conclude that: (1) The moderate dose of phenacetine is without any distinct action on any vital organ; (2) large doses lessen reflexes by a direct action on the spinal cord; (3) doses of 0.5 gramme per kilo of body weight (equivalent to a little less than one ounce for a 150-pound man) kill by arrest of respiration; (4) doses even up to 0.5 gramme per kilo had no distinct effect on the circulation.

NASOPHARYNGEAL DISEASE IN PEDIATRIC PRACTICE.

HUBER in writing on this topic says at the close of his article:

1. The removal of the lymphoid hypertrophies in the naso- and oropharynx, with the cure of the associated nasopharyngeal

catarrh, will restore the patency and permeability of the nose. If done early, many local pathological changes may be avoided.

2. The general health will be more or less improved.

3. The mental faculties and general intelligence will be improved.

4. Defects in speech and in hearing due to nasal troubles will disappear.

5. Deaf-mutism may be relieved.

6. The functions of taste and smell will be restored.

7. Reflex neuroses of various kinds will be modified or cured.

8. Nasal and supposed pulmonary hemorrhages will disappear.

9. Thoracic deformities will be relieved or cured.

10. The tendency to acute rhinitis, pharyngitis, bronchitis, and pneumonia becomes less and less with the restoration of normal respiration.

11. The dangers attending the presence of enlarged cervical glands will be avoided.

12. The invasion of various infectious diseases is less likely when the nasal mucous membrane is in a healthy state.

13. The danger of meningeal infection from the nasopharynx will be lessened.

14. Ear complications in general, and particularly those incidental to the infectious diseases, will be avoided or rendered less dangerous.—Jacobi's "Festschrift," 1900.

THE USE OF THE DIPHTHERIA ANTITOXIC GLOBULINS OF THE BLOOD-SERUM INSTEAD OF THE ENTIRE SERUM IN DIPHTHERIA.

In Jacobi's "Festschrift" (1900) PARK tells us that ever since the discovery of the value of diphtheria antitoxin in the prevention and treatment of diphtheria, it has been the desire of those using and producing the serum to separate the diphtheria antitoxin from the blood-serum, with the hope that in this way the antitoxic effect might be retained, while the deleterious effects sometimes produced by injections of blood-serum, as evidenced in the rashes and the effect on the red blood cells, might be avoided. As investigation has progressed, it has become more and more evident that the antitoxic substances in the blood are closely combined with the globulins of the blood, and that whatever precipitates them precipitates the antitoxins also. In fact, without globulin there appears to be no antitoxin, and wherever antitoxin exists globulin does also. Up to the present time, no difference has been detected between globulin which is not antitoxic and that which is, except in the specific characteristic of neutralizing toxin. The latest investigations on this subject have been made by Atkinson in the Research Laboratory of the Health Department of the City of New York, and by Seng in Germany.

At the Research Laboratory of the Department of Health of the City of New York, they have made it a point to draw blood from all the horses which are to be used for the development of antitoxin before they have received any injections of toxin. This so-called normal blood, as well as the later drawings of antitoxin blood, is tested for the amount of globulin and the amount of toxin.

A most remarkable relation between the increase of antitoxin and the increase of globulin has thus been shown. These tests have been made by Mr. Atkinson, the assistant chemist, and through his kindness, Park says, he can quote the following recent tests of a number of blood-drawings from a horse, showing variations in the amount of antitoxin. It is interesting to note that this horse contained in its blood before receiving any diphtheria toxin an amount of antitoxin equal to two units per cubic centimeter. This is the largest quantity that we have met with. Whether this substance in normal blood should be considered a general or specific antitoxic substance is an interesting question which is now being investigated.

Date of bleeding.	Amount of serum in Cc.	Amount of globulin.	Amount of diphtheria antitoxin in each Cc.	Amount of albumin.
7–28–1899	10	.3235	2 units.	.3127
10–20–1899	10	.8087	1200 units.	.2341
11– 9–1899	10	.5934	650 units.	.2727
11–14–1899	10	.5116	600 units.	.2938
11–18–1899	10	.4292	400 units.	.3133

Between the first and second bleedings, weekly injections of strong diphtheria toxin were given; the last injection being 300 cubic centimeters of a toxin of which $\frac{1}{300}$ cubic centimeter was the fatal dose for a guinea-pig of 250 grammes weight. Between the second and third bleedings, two injections of toxins similar in amount to the last noted were given. It is interesting to observe that, in spite of the continued toxin injections, the amounts of antitoxin and globulin both rapidly diminished. Between the last three bleedings no toxin was injected.

The above table gives a striking example

of what Mr. Atkinson has found in all the horses. In no case has increase in globulin failed to accompany an increase in antitoxin.

These facts — the constant association of globulin with antitoxin, and the constant fairly proportional increase or decrease of the globulin in horses' blood with the increase or decrease of the antitoxin — bring the relation of these two substances so close together that while we are not yet fully justified in saying that antitoxic substances are globulins, still Park thinks we must for the present at least consider that when we have obtained the globulin of the antitoxic blood we have obtained as nearly pure antitoxin as we have at present a prospect of getting.

He therefore decided to use this "antitoxic globulin" in cases of diphtheria, in place of the blood-serum entire. The globulin with its antitoxin was obtained as follows: It was precipitated from the antitoxic serum by means of saturating it with magnesium sulphate, and then filtered off. The globulin was then pressed between a number of layers of filter-paper, so as to remove as much of the saturated magnesium sulphate solution clinging to it as possible. The globulin and remaining magnesium sulphate were then dissolved in a quantity of water equal to one-half the original bulk of serum from which the globulin was obtained. The magnesium was then precipitated out as the phosphate (sodium magnesium phosphate) in the following manner: A little sodium chloride is first added, to prevent the precipitation of the magnesium as a hydrate, when the sodium hydroxide is added. Sufficient sodium hydroxide is then added to make the solution slightly alkaline. Finally the calculated amount of disodic hydrogen phosphate is added. The mixture is allowed to stand in a cool place, and stirred occasionally. Afterwards the precipitate of the magnesium sodium phosphate is filtered off. The filtrate contains all of the globulin and all of the antitoxin, together with about ten per cent of sodium sulphate and a trace of sodium chloride. Each cubic centimeter of the fluid will contain twice as many units as the original serum.

In practice Park has diluted this antitoxic globulin so that each cubic centimeter contained the same number of units as the original serum, as the concentrated solution seemed slightly more locally irritating.

Up to the present time the globulin has been used in forty-eight cases, with the following results: In about one-fourth of the cases it caused some local edema with slight pain—both somewhat more than the serum ordinarily produces. Upon the diphtheria the results are equally good with those from the antitoxic serum. As to general effect, such as the rashes, results have been similar to those following the use of the serum.

The dried globulin has retained for two months the greater part of its antitoxic properties. It is easily soluble, and can be readily put up in tablets, and so transported without danger.

Park says that as a whole these results are very disappointing, as this antitoxic globulin apparently contains the greater part at least of those substances which cause the more or less deleterious effects of the blood-serum; and as there seems no probability of separating the antitoxic properties from the globulin, the present outlook for a substance which, while being a specific neutralizing substance for diphtheria, will at the same time be absolutely harmless, is not encouraging. What is true for diphtheria antitoxin is also probably true for other protective serums.

There seems to be some practical advantage, however, in having a soluble, permanent, and compact dry antitoxic substance which is not in danger of quick deterioration.

Further chemical experimentation will probably be able to show a practical method for separating the sodium sulphate from the globulin, if that seems desirable. Except for its slight local irritant effects, the sodium sulphate seems harmless.

ENURESIS AND "IRRITABLE BLADDER" IN CHILDREN.

BIERHOFF writes in Jacobi's "Festschrift" (1900) that as the diagnosis of the condition resolves itself into a recognition of the local vesical or urethral changes, as well as of the causes underlying and preceding them, so does the treatment resolve itself into that of the local vesical or urethral condition, as well as of the remoter factors.

In considering the treatment Bierhoff says he cannot do better than to refer to the admirable and comprehensive article of his own master, Jacobi, with whose words upon this subject he agrees completely. The general health of the child must be looked after and treated, if depreciated, not only by dietary but also by hygienic and hydrotherapeutic measures. Above all, he would warn against corporal punishment, or anything which sa-

vors of brutality, for these can only serve to increase the general nervous depreciation. He cannot believe the condition to be due to innate depravity or slothfulness, as some authors have intimated. Furthermore, all severe mental strain should be guarded against. The digestive tract must be looked after, and indigestion, constipation, diarrhea, or intestinal parasites removed by appropriate treatment. The evening meal especially should be light and easily digestible. The genital tract, too, must receive appropriate attention; phimosis must be reduced, adhesions ruptured. Above all, the glans penis and preputial sac must be frequently cleansed, as from this point, in many cases, infections of urethra or bladder have their start. Vulvitis or vaginitis, as well as urethritis, must be treated with reference to their gonorrheal or non-gonorrheal character. In the former, he would strongly advise the use of one of the new silver salts in half-per-cent solution. If due to other bacteria, then the solution of bichloride of mercury, 1:15,000, will give most gratifying results, the discharges wholly disappearing in a very few days. If bacteria be present, the internal use of urotropin, in appropriate doses, combined with irrigation of the bladder, by means of the sterilized catheter, with solution of nitrate of silver 1:5000, or stronger if the patient tolerates it, will give excellent results.

The treatment of cystitis depends, to a great extent, upon the cause. Those cases which depend upon the presence of a vesical calculus, or of a foreign body, or upon pyelitis, cannot be cured until the causative factor has been removed. Consequently this must first be sought for and appropriately treated; afterward vesical irrigations with one-per-cent boric acid solution, followed by the instillation of one-fourth- to one-per-cent solution of nitrate of silver, the latter being allowed to flow off after three to four minutes, and the bladder subsequently irrigated with boric acid solution, will give excellent results. The polyuria of diabetes or of nephritis must be appropriately treated. That due to imbibition of large quantities of fluid may be influenced by the restriction of the quantity ingested. Bierhoff holds it to be a wise precaution to restrict the quantity of fluids taken during several hours before retiring. Onanism must be guarded against by watching the children, and by examination for and treatment of the underlying cause; this may frequently be found by watching the playmates. The enuresis which at times accompanies the pelvic congestion of menstruation, preceding or accompanying the flow, is best treated by hot sitz baths.

Diseases of the respiratory organs, which interfere with proper breathing, such as nasal obstructions, adenoids, or hypertrophied tonsils, must receive appropriate treatment; similarly also, disturbing, itching skin eruptions, which act, like those of the respiratory tract, as causes of enuresis, by disturbing sleep.

Concerning the results of faradization of the urethra Bierhoff cannot speak, as he has not employed it; however, as the urethra which is sufficiently large to permit of the insertion of an electrode is also large enough to admit the small "children's cystoscope," he would personally prefer to use the latter and obtain some certainty regarding the real cause of the enuresis. Where the size of the urethra will permit, the use of small sounds or of the small-sized psychrophore ought to prove of value, where the condition is due to congestion in the membranous or prostatic urethra. In the female, penciling of the entire urethral mucous membrane, from and including the sphincter to the meatus, with one-fourth- to one-half-per-cent solution of nitrate of silver, by means of the endoscopic tube, every second day, gives excellent results.

Of drugs, bromides, chloral hydrate, rhus aromatica, belladonna and atropine, ergot, nux vomica, and strychnine have been recommended, belladonna and atropine being especially highly spoken of.

The treatment which has given Bierhoff the greatest satisfaction, both in adults and children, has been the following: Where the patients were too small to admit of direct local treatment, hot sitz baths, once or twice daily, the appropriate treatment of accessory causes, the restriction of fluids in the evening, combined with a light evening meal, were employed; at night, where possible, the child was laid so that the head was lower than usual, either by laying a pillow under the hips, or better still by removing the pillow from under the head, and raising the foot of the bed; and where local treatment was possible, applications in the endoscopic tube, especially directly to the sphincter itself and the mucous membrane of the trigonum vesicæ, or by vesical irrigations and instillations. In this way proper diagnosis and properly applied treatment will usually effect a cure in from a few days to a few weeks.

THE TREATMENT FOR PULMONARY PHTHISIS.

In the *Scottish Medical and Surgical Journal* for July, 1900, WHYTE contributes a summary on this topic. This is a subject of which it is well for us to take a general view from time to time, more especially when new modes of treatment are under trial. Further, with a disease which is so common, and in many cases so relentless, our activity on the patient's behalf is apt to run on monotonous lines. We are apt to treat the disease instead of the patient. The sanatorium treatment, which in many ways appears to be the best, can, for various reasons, be taken advantage of only by the few.

In these circumstances the general practitioner will welcome an abstract of a valuable paper by Prof. C. Gerhardt (*Die Therapie der Gegenwart*, May, 1900).

Early diagnosis and complete examination of the patient are more necessary than ever. Every case has some special point; all have a tendency to illusions, to hopefulness, and to restlessness. The first must be combated, the second encouraged, while the third can be utilized.

We all know how patients in the early stage endeavor to explain away their symptoms. Hemoptysis is often a most valuable ally to the physician in opening the patient's eyes to the seriousness of the case.

Hopefulness is turned to account in inducing the patient to use every effort in fighting the disease, the danger of which he has been made to appreciate. Restlessness can be utilized in removing a patient to more favorable environment, either in the same or in another climate. Fresh air and plenty of it is one of the first requisites, and it can be got on the high seas, among the mountains, in the steppes, on the edge of the desert. A poor cottage in the lonely Highlands is often better for the workingman than the best hospital in the great city.

Patients who are pasty-faced, well nourished, and free from fever are better amongst the mountains, provided there is no serious affection of the larynx; while those who are thin, who fever easily, and who have an excitable heart, do better the further south they are.

Patients must be as long as possible in the open air; at first in their room in bed at the open window; then an hour outside, gradually increasing. They must gather strength and not spend it; they must lie and not go about.

The next most important point is abundance of nourishment, and this should contain as much fat and fatty foods as the appetite can stand. Milk in abundance, cod-liver oil, all sorts of ordinary food—whatever the patients can best take must be pressed upon them.

The products of the chemical laboratory are referred to somewhat slightingly.

A third most important point is the hardening of the patient, at first perhaps by dry rubbing; then rubbing with spirits, brandy and water, tepid water, cold water; finally by the application of cold douches or shower-baths. Such treatment not only protects from cold, but has a most valuable stimulating effect on the nervous system.

Drugs have their uses, though anything of the nature of a specific is not to be found. Feverishness can be tackled only indirectly with much advantage; occasionally a febrifuge, such as phenacatine, antipyrin, or quinine, may be given with a view to procuring a night's rest.

A dose of alcohol may check the rigor which frequently ushers in the rise of temperature. Gerhardt is inclined to believe that some benefit may be derived by consumptive patients from small quantities of alcohol. He considers phthisical sweats the final act in the febrile cycle, just as in ague, and gives antihydrotics very sparingly. Their effect is usually very brief, and they are apt to upset the stomach. For loss of appetite there is nothing better than living in the open air.

Creosote, or one of its derivatives, is warmly recommended for improving the appetite and diminishing the secretion in the air-passages. No one now believes that it acts directly on the tubercle bacilli in the body.

Coughing, when it is of a dry, obstinate character, may be due to an ulcer in the throat. Local applications to heal, or at least to anesthetize, the ulcer are indicated; or a dry pleurisy may be the cause; or the quantity of expectoration may require limitation by creosote, tolu balsam, terpine hydrate, or similar means. Gerhardt avoids the old expectorants, as likely to destroy the appetite. Again, many patients must be educated to suppress their cough; in small matters like this the constant presence of a physician is most useful. As for sleeplessness, it is easier to say what should not be done than what should. One does not wish by morphine to procure sleep, at the expense of

retaining putrefactive germs in pulmonary cavities; one tries rather what can be done by remaining long in the open air, by suitable nourishment, especially light suppers, by sleeping with open windows, quiet surroundings, etc. Heroin in doses of one-twelfth grain, or dionin, may be tried, or various inhalations, or balsams internally, or bromides, the effect being partly or chiefly mental.

For hemoptysis are recommended rest, cold food, and the ice-bag. A teaspoonful of salt in a glass of water is perhaps nauseating, but useful. Morphine in special cases; ergot, though its mode of action is obscure; application of a ligature to the limbs, so as to compress the veins, but not the arteries; atropine—these all have apparently beneficial action.

Tuberculosis of the larynx, in its various forms, demands early treatment. Superficial ulcers should be touched with thirty- to sixty-per-cent solution of lactic acid, for example. Avoidance of coughing and speaking is necessary.

Constipation should be dealt with in the gentlest way. For diarrhea from intestinal ulceration, proper diet may do much—milk, mucilaginous soups, Iceland moss, rice, soft-boiled eggs, cocoa, etc. Amongst drugs are mentioned bismuth, zinc, tannic acid, tannigen, tannalbin. In England extractum belæ is praised.

Increase of weight does not necessarily indicate that healing has set in, though it is, of course, a favorable sign.

Gerhardt's paper, which deserves to be read in its entirety, closes with an eloquent statement of the greater responsibilities now laid upon the physician in the treatment of phthisis.

THE USE OF HYDROCHLORATE OF COCAINE IN PRIVATE SURGICAL PRACTICE.

WEBB writes in the *Scottish Medical and Surgical Journal* for July, 1900, upon this topic. He states that in private practice the dread of the patient to take a general anesthetic, and often the difficulty of getting an administrator, are felt as distinct disadvantages to operative work being done. Dr. Webb has thought, therefore, that the following remarks might serve a useful purpose if published.

In a variety of cases during the last six years of private practice he has used a ten-per-cent solution of cocaine in operative work not usually undertaken without the assistance of a general anesthetic. For many years he has never used anything but a subcutaneous injection of cocaine in circumcision; ten minims of the solution being injected in three or more places in the line of the intended incision. The operation is rendered quite painless. In tonsillotomy at all ages, and removal of nasopharyngeal adenoids in young adults, he has found painting the surfaces and along the nasal floor sufficient to render the operation quite painless. Last year he was induced to use cocaine in the operation of litholapaxy, and in three different sittings he removed under the same anesthetic crushed stone weighing one and a half ounces. The pain and inconvenience experienced in these cases was infinitesimal, and the patients' sensations were of great assistance in preventing injury to the wall of the bladder and the too forcible compression of the india-rubber bulb in washing out the débris.

Recently he had to operate at midnight on a female of eighty years of age for strangulated inguinal hernia. With only the assistance of the district nurse, by means of the subcutaneous injection of cocaine and its subsequent application by means of pellets of sublimate wool soaked in the solution, the operation was successfully performed. Although the patient only survived the operation a few days, she died a peaceful and painless death. In this case he feels sure a general anesthetic could not have been borne.

A CASE OF ECLAMPSIA AT THE SIXTH MONTH OF PREGNANCY TREATED BY SALINE INFUSION AND VERATRUM VIRIDE.

BALLANTYNE writes in the *Scottish Medical and Surgical Journal* for July, 1900, reporting a case of this character.

The case he narrates was a typically severe one of eclampsia gravidarum. There were in all about fifteen convulsions between six in the morning and eight in the evening, and the urine was loaded with albumin and contained also blood and tube casts. The recovery was most encouragingly complete, and, taking into account all the circumstances, wonderfully rapid. It has to be noted that the hypodermic injection of the saline infusion was not the only means of treatment employed; the convulsions were controlled by chloroform, the tincture of veratrum viride was injected up to forty-five

minims, rectal injections of bromide and chloral were given, magnesium sulphate was administered by the mouth, and the induction of abortion was carried out. Doubtless all these measures played their part in achieving the satisfactory terminal result; but in attempting to distribute the praise justly, it is important to remember that the cessation of the convulsions and the general improvement in the patient's condition occurred eighteen hours before the birth of the living fetus. Indeed, uterine contractions were few, far between, and ineffective till the morning succeeding the day of the patient's illness. Further, the fetus was born alive, and therefore it is not permissible to invoke fetal death as a cause of the cessation of the fits. On the whole Ballantyne is inclined to give most of the credit of the improvement which took place to the saline infusion and the tincture of veratrum viride; but doubtless the chloral contributed also to the result, and possibly the progress of labor, although extremely slow, by emptying the uterus, made the final recovery complete.

The supervention of eclampsia or of other grave maternal states due to pregnancy before the period of viability of the fetus is, according to the teaching of the modern French school of obstetricians, the only real indication for the performance of medical or therapeutic or prophylactic abortion, for the operation has been known by all these names. Narrowness of the pelvic canals, however great, is not any longer regarded as a sufficient indication for therapeutic feticide—the induction of premature labor, when the fetus is of course viable, does not come into this category of cases—for the development of the operations of the Cæsarian section and of symphyseotomy has made it possible to deliver the mother of a living child with a working minimum of danger to herself. Even in the case which has been narrated it will remain in Ballantyne's mind as an unsettled speculation whether the feticide, for so it turned out to be, was justifiable, and had he desisted from interference after the giving of the saline infusion, might not the pregnancy have gone on till at any rate the fetus was viable? He is inclined to think not, but cannot say so with assurance.

RECTAL INJECTIONS OF COD-LIVER OIL IN PHTHISIS.

ZEUNER (*Therapeutische Monatshefte*, June, 1900) reports good results from the use of cod-liver oil enemata in cases of phthisis, particularly in one patient who had been sent back from Goerbersdorf as being too far gone for treatment there. He lays great stress on the composition and method of use of the enemata. They were not more than four ounces in quantity, and were administered once a day, an hour after the rectum had been emptied by a simple enema, or immediately after a natural evacuation. In order to insure their prolonged retention they were warmed and injected very slowly, the patient being placed in the knee-elbow position. If this was done at night the injection was not evacuated, but remained in the rectum for twelve or thirteen hours. The cod-liver oil was previously digested for two hours with the following substances: Two parts of pure pancreatin, 0.2 of inspissated ox-bile, 0.6 of sodium chloride, and 20 of water to each 100 of oil. Immediately before injection the emulsion was well shaken up, and three drops of eucalyptus oil added. The pancreatin is added to assist the absorption of the fat globules, and the bile to aid their passage through the intestinal wall, which is also furthered by the sodium chloride (Leube). Finally, the emulsion must be alkaline, or at least not acid.—*British Medical Journal*, June 23, 1900.

MORPHINE IN THE TREATMENT OF PUERPERAL CONVULSIONS.

HOIG writes in the *Canadian Practitioner* for July, 1900, that the conclusions he has arrived at in regard to this question are as follows:

1. That while in morphine we possess a valuable, perhaps the most valuable, drug for the control of puerperal convulsions, he would not yet be inclined to rely on it in the worst types of the disease with complete suppression of urine and a comatose state between attacks, but would rather have recourse in such cases to every means to promote diaphoresis and the free action of the bowels.

2. That it is much less useful in non-albuminous cases than in those where albumin is present, and may even be harmful in such cases.

3. That it is of comparatively little value before delivery, chloroform being the drug of election at that time.

4. That to be efficient it is necessary to use it in large doses, as much as half a grain being borne at such times without any harm resulting.

THE TREATMENT OF SQUINT (STRABISMUS) FROM THE STANDPOINT OF THE FAMILY PHYSICIAN.

The *Canadian Practitioner* for July, 1900, has in its pages an article by DUNCAN, with this interesting title. He says supposing a child of three years be brought to the attention of the family doctor. A squint has been noticed; perhaps it is constant or it may be only occasional. In order to give proper advice we should first remember that strabismus has two great causes: (1) It is due to paralysis of one of the ocular muscles; (2) it is due to a faulty shape of the eye, no paralysis being present.

Strabismus, then, is: (*a*) paralytic; (*b*) non-paralytic.

In determining whether we have before us one of the first or one of the second class, we have to remember two things: first, that in a paralytic squint the cause is usually very evident (such as a history of inflammatory conditions, syphilis, diphtheria, wounds, blows, etc.), and secondly, that paralytic squints are very rare, perhaps one case in ten being due to this cause. Cases of paralytic squint, then, we will not discuss, but concentrate our attention on strabismus produced by badly shaped eyes, or non-paralytic squint.

The vast majority of squints in children are caused by the eye being misshapen. Either it is too flat (producing hyperopia), or it is too prominent (producing myopia), or it is astigmatic. Duncan says the vast majority —some authorities consider seventy-five per cent—are thus caused.

Assuming, then, that we have before us a case of non-paralytic squint, what advice would be given? That would probably vary according to circumstances. For instance, if the child was weakly it would be put under tonics, with the expectation of recovery from the strabismus when its strength returned. Or the advice might simply be, "Wait awhile, the child will outgrow it;" or it might be, "Have the eyes examined as soon as possible."

Now, in regard to the first line of action, it is quite possible that, in a weakly child, a comparatively slight cause may unbalance the eyes, and a proper course of general medicine may restore the balance. Such cases do occur. Even in them, however, the underlying cause is likely to be faulty refraction. But in the vigorous, healthy child, at the age we are speaking of (three years), squint is almost sure to be due to faulty refraction, and it is a dangerous waste of time to adopt a purely waiting policy. It is a dangerous waste of time for the reasons stated, which may be restated and added to thus:

1. That the vast majority of cases of squint in children are due to faulty shaped eyes—in other words, to faulty refraction.

2. That if due to faulty refraction, the child will not outgrow it.

3. That, by waiting, a squint may become established so that an operation is required for its cure.

4. That the waiting may result in a partially blind eye.

5. That if due to faulty refraction, there is a probability of cure by the use of proper glasses.

Even if convinced on most of these points it is right for the family adviser to ask, What success may be expected even if proper glasses are applied? He answers that the experience of specialists is that properly fitted glasses in many cases will cure the strabismus, prevent amblyopia (blindness), which would otherwise supervene, and render an operation unnecessary. Such being the case, the family medical adviser would in all cases of strabismus in which the cause was not perfectly plain unhesitatingly say the child's eyes must be examined as soon as possible.

This leads Duncan to the practical points of his paper. We can well understand that many a parent, if thus advised, would answer: "But I have neither the time nor the money to go to a specialist in a great city." His answer is that it is not now necessary to do so. In all cities are medical men who can attend to such cases just as well as those in a larger place. Nor need time deter him. Three or four days should be sufficient to ascertain the refraction and prescribe proper glasses; then the patient could return home and be under the care of his own physician. For those who could not afford to pay for the examination, there are our hospitals—in large or small cities.

During the weeks that might ensue between the time when the case was first seen and when it went to be examined, the doctor would apply atropine, the prescription being:

> Sulphate of atropine, 2 grains;
> Distilled water, ½ fluidounce.
>
> Dissolve. S.: One drop in each eye once a day.

This treatment may be continued for many weeks, and usually without the smallest detriment.

Duncan sums up the treatment from the standpoint of the general practitioner as follows:

1. In a child aged three years or over he would in every case (with the exceptions noted) advise a thorough examination of the eyes, so as to ascertain the refraction.

2. He would advise that this be done as soon as possible, but if some weeks must elapse before this can be done, he would use atropine drops once, twice, or three times a day in both eyes, ordering that the drops be left off for at least two weeks before the child goes to be examined.

3. If it be reported to him that the child needs to wear glasses, he would exercise his influence with the parents to see that they were worn.

4 In case of any hesitancy on the part of the parents to attend to the matter, he would free himself from responsibility by pointing out some of the dangers of delay: (1) The child may be permanently cross-eyed; (2) he may be partially blind; (3) an operation may be needed in after years; (4) the operation, though it may straighten the eye, will not cure the blindness.

ARSENICAL SODIUM PHOSPHATE.

The *Medical Press and Circular* of June 11, 1900, has in it an article on this subject by TICHBORNE. Some short time since a well known manufacturer of sodii phosphas effervescens discovered that the sodium phosphate he had been using contained a "dangerous percentage" of arsenic. The manufacturer took a very courageous but proper course, and issued a circular letter calling in all their effervescing preparations. This event raised the spirit of inquiry, and it was found that arsenic was a very common impurity in sodium phosphate; in fact, we may emphasize it by saying that the difficulty would be to find a sample free from arsenic. In some cases it was only a trace, whilst in others it was present in very considerable quantities.

The cause of the presence of this dangerous impurity is not far to seek. The tendency of modern drug production has been for many years in the direction of cheapness at the expense of purity. Sodium phosphate is largely made from bone ash, which in the first part of the process is treated with sulphuric acid. The economical manufacturer uses commercial oil of vitriol, which is never free from arsenic, and is sometimes loaded therewith. The whole of this arsenic passes into the sodium phosphate, and appears as sodium arsenate. Now comes in rather a curious phase of the question. The sodium arsenate being isomorphous with the sodium phosphate, it is impossible to purify the latter by the ordinary process of recrystallization, and although a recrystallized variety is sold at an advanced price, it is really hardly any purer as regards arsenic than that sold for manure. Still further, in the condition as found, the arsenic does not readily come down as a sulphide, and many specimens, if hurriedly tested, might appear as only slightly impure, whilst in reality they were loaded with arsenic.

Tichborne has himself bought specimens of phosphate of soda in several important shops in Dublin, and not one of them was free from arsenic. Three of them gave the following figures, and may be said to fairly represent the commercial samples; he has since obtained two samples in which the arsenic stands much higher: No. 1, .033 per cent As_2O_3; No. 2, .024 per cent As_2O_3; No. 3, .028 per cent As_2O_3.

It will be seen that the percentage varied from .024 to .033, or as arsenate of soda from .045 to .062 per cent. Now, calculating the maximum dose of sodium phosphate at half an ounce and arsenate of soda as one-tenth of a grain, it would show that the most arsenical of the samples would contain in a maximum dose .134 grain of arsenate of soda, being .034 in excess of the maximum dose of anhydrous arsenate of sodium.

The commercial specimens of sodium phosphate are unfit for anything but manure. The process indicated in the Pharmacopœia should be discarded, and only a salt should be used for medicinal purposes that is made by the interaction of phosphoric acid and pure sodium carbonate.

NOCTURNAL ENURESIS.

In an article in *The Lancet* of June 30, 1900, on "The Commoner Neuroses of Childhood," KAUFFMANN discusses nocturnal enuresis. This condition is, he supposes, still regarded by some as an independent disease, and is treated as such. He wishes to show in his remarks that that is not really the view which should be taken of this common and annoying symptom. Mothers and fathers are accustomed to regard enuresis as a bad habit—and such undoubtedly it may become—but it is

never a habit contracted from either mere wilfulness, or from imitation, or for the sake of producing a pleasurable sensation; and the only habit which can be considered as applying to enuresis is one of easy excitability of the cord centers which control the muscles of the bladder. Punishment is clearly out of place in the treatment of a habit of this kind. For the first factor of nocturnal enuresis we must, however, look elsewhere, and Kauffmann thinks that the primary causes may be fairly stated as follows: (1) Disease of the bladder or urinary passages, as, for instance, stone; (2) irritation of the rectum, as from worms; (3) excessive secretion of urine; (4) excessive irritability of the spinal centers concerned in micturition; or (5) excessively irritating quality of the urine.

Although it is convenient to separate the fourth and fifth causes, and although, in fact, each of them may be singly operative in causing nocturnal enuresis, yet these two factors will, as a rule, be found acting conjointly. Excessive irritability of the spinal centers there always must be to lead to the untimely discharge of urine during sleep, but this probably never occurs (except in gross disease of the spinal cord, with which we are not here concerned) without a condition of urine which must be considered as abnormal. If we exclude those cases in which there is an excessive formation of urine and those in which there is actual organic disease of the urinary passages, we shall find that the urine of children suffering from enuresis is generally sharply acid, often, in addition, rich in urates, more rarely depositing uric acid; sometimes an excess of oxalate of lime will be found. Such urines are scanty and concentrated rather than copious, and they indicate an error of the metabolic processes which may depend upon disease or diathesis, or upon faulty diet. In conformity with these points we generally observe that enuresis first comes on either after an illness or after a change of diet, or when, in the absence of definite illness, the child has been in depressed health. The state of the urine is, in fact, the index of a disordered metabolism. How the disorder comes about is shown to us by the forerunners of the enuresis, though it must be admitted that the history is often difficult to obtain. We may safely assert that the disturbance of the assimilative and dissimilative processes is never primary, but that it is invariably the result of an altered state of the blood, which in turn has its cause in the presence of toxic substances, the proceeds of microbial action, or the derivatives of a faulty diet.

In a few instances nocturnal enuresis results from the direct excretion of pathogenic bacteria by way of the urine. Charged with considerable quantities of living bacteria and their derivatives, the urine naturally has an action upon the walls of the bladder irritating beyond the normal, and the result is that during the time when voluntary control is smallest the spinal centers are apt to respond vigorously to the extraordinary irritation. Kauffmann has lately seen a case in which this occurred.

THE VALUE OF UROTROPIN AND ITS PRACTICAL APPLICATION AS A URINARY ANTISEPTIC.

DRAKE-BROCKMAN writes in *The Lancet* of June 30, 1900, about the drug urotropin. He concludes, first, that with reference to its action as a urinary antiseptic urotropin can be used with success in any condition involving invasion of the bladder or urinary tract by pathogenic microorganisms. Foremost among these pathological conditions cystitis may be reckoned, whether primary or secondary to enlarged prostate or vesical calculus, etc. All of these conditions directly render the urine septic, which under the circumstances, moreover, acts as a most efficient medium for the development of these pathogenic microorganisms once infection has taken place. In all such cases this drug usually gives speedy relief. Under this head the author makes mention of its use as a preliminary to operations connected with the bladder or urethra, but more especially with reference to litholapaxy. In this case he has made it more or less a routine in his practice to administer the drug a day or two previous to operation, when its speedy action, especially in India, is a decided benefit to patients who cannot and who do not usually like to stay longer in hospital than necessary, in order to render the urine as aseptic as possible, as there is usually a certain amount of cystitis present in most cases of vesical calculus before operation. He has good reason to believe that in one case at least upon which he operated — one of vesical calculus of large dimensions associated with enlarged prostate — in which there was marked concomitant cystitis, the patient's early and complete recovery was directly attributable to the preliminary use of the drug in this manner. Its employment

possibly prevented the further development of septic microorganisms within the bladder, and thereby lessened the risk of any of these traveling backward up the ureters and ultimately finding their way to the kidneys and setting up septic infection there, inducing pyelitis, etc., which complications may so easily ensue after such operations. Further, under this head he also mentions the important use that this drug may be put to in rendering aseptic the urine of patients suffering from enteric fever or other diseases in which it is known that pathogenic microorganisms are eliminated from the body by this channel. There is little doubt that this occurs in diseases other than enteric fever; for instance, it is known that the bacterium coli commune is frequently found in the urine, and when present there plays a prominent part in the production of cystitis, possibly in the course of its elimination from the body in this way.

It is now a well established fact that the urine of patients suffering from enteric fever, more especially after the second week of the disease and during convalescence, contains large numbers of the bacillus typhosus. It is therefore important thoroughly to disinfect the liquid excreta of such patients as well as their fecal evacuations. The use of urotropin in such cases should prove invaluable in preventing the dissemination of enteric fever by this important and, the author fears, much overlooked channel of infection. It is obvious that, if possible, the urine should be disinfected before its evacuation from the bladder, rather than that this process should be left till afterwards, possibly to be forgotten altogether. This point is of very great importance in India and in tropical countries, where the means employed for the disposal of the excreta are usually some form of dry earth system. That this is not always under the strictest supervision must be within the cognizance of those medical men who have practiced in India, where liquid excreta are often carelessly disposed of by being thrown broadcast over the surface of the soil without previous disinfection. The risk is undoubtedly increased in the case of enteric fever affecting native patients, whose ideas of sanitation as well as of decency are usually very crude, and who, as a consequence, micturate as well as defecate indiscriminately over the surface soil, anywhere and everywhere. It is easy to conceive that when the soil is dry, and hot winds blow, or a dust-storm occurs, the bacilli as well as the spores of pathogenic microbes (where such occur, which, however, is not the case, of course, with the bacillus typhosus) are carried far and wide, and that they eventually find their way into some well or other source of human food or drink supply with disastrous results. In India, it may be remarked, wells are usually of the open, and therefore unprotected, kind.

There is little doubt in the writer's mind that the subject of the thorough disinfection of the urine of patients suffering from enteric fever, previously to its final disposal, has not hitherto generally at our hands received the notice that it deserves. At any rate, as regards India in particular, he feels sure that enteric fever is spread more by means of this than by almost any other agency. Moreover, he fancies that when the medical history of the war in South Africa, especially with reference to the prevalence of enteric fever among the troops, comes to be written, it will go far to prove the truth of his statement. It was conclusively shown by one observer, as a result of some very interesting experiments made by him to determine the microbic impurity of the air of inhabited dwellings, that the number of microbes present per cubic foot of air was directly in proportion to the amount of dust particles floating about in the air of the space experimented upon, proving that dust is one most important agency by which microbes are disseminated. The particular case to which he refers was that of a school in which large numbers of children were accommodated. If the prevalence of dust ever (more especially in tropical countries, where it is blown far and wide by means of hot winds and dust-storms) be taken into account, it may be imagined that a very important part is played by it in the dissemination of pathogenic microorganisms of all kinds. That being so, we cannot exercise too much trouble and care in the execution of measures for the complete and effectual disinfection of all excreta, urinary as well as fecal. It is in such cases that he sees a wide and successful field for the employment of a drug such as urotropin, by means of which we are enabled to check the growth—in fact, to destroy the vitality—of pathogenic microorganisms of all kinds within the body and before their evacuation, at any rate, by such a channel as the urinary tract. Under the head of a urinary antiseptic, also, urotropin should prove of great value in the treatment of gonorrhea, gleet, etc.—in fact, in any form of urethritis of microbic origin.

Secondly, as regards the action of urotropin

as a solvent of uric acid, the writer has given it with benefit in cases of gout, gravel, and uric acid diathesis, and when combined with salicylic acid in certain cases its action is rendered more potent still. With reference to its action as a solvent of calculi, he fears for obvious reasons that we cannot hope that it will in any way replace surgical interference. He does not doubt, however, owing to its capability of rendering alkaline urine acid, and aided by its antiseptic properties which retard the growth of the bacteria of ammoniacal decomposition, that it may possibly prevent the growth of calculi, always in the bladder, by lessening the chance of phosphatic deposits taking place. These phosphatic deposits usually occur sooner or later if left alone. In order to test its value in this matter he made some experiments on a small scale with the drug *in vitro*. Small portions of uric acid were taken from fragments of a calculus removed previously by litholapaxy. These were exposed to the action of a concentrated solution of the drug in pure and freshly sterilized water. The solution was then placed in an incubator and kept at body heat for some days, after which time he could not detect any appreciable loss of weight or substance. This result goes rather to prove that when a calculus, even of uric acid formation, has already formed, we cannot look to much permanent benefit from the exhibition of this drug, though it is just possible that in the presence of normal urine its solvent action would have been more pronounced. Stress of work and his having to proceed on sick furlough, he says, prevented him from going more into this matter then, and he fancies that its solvent action on uric acid depends upon other complex chemical changes during its passage through the body, which probably operate on this product through the medium of the blood and not locally. This is a subject which he hopes to go into on his return to India.

Thirdly, with reference to its therapeutic action as a diuretic, an effect which is distinctly beneficial as a secondary help to its antiseptic action, it occasionally causes slight purging. This the author noticed particularly in one case of enlarged prostate with irritable bladder in which he gave the drug. The amount given need not exceed thirty grains per diem, and it forms an agreeable, almost tasteless, beverage when taken with a little aerated water. He has himself hitherto seen no untoward results from its administration, but he believes that when the drug has been given in excess it has caused unpleasant symptoms, such as distressing diuresis and pain in the bladder and urethra, accompanied with slight hematuria, all of which symptoms, however, have at once ceased on the suspension of the drug or diminution of its dose, no permanent injury resulting.

In conclusion, the writer feels sure that there is a very wide field of usefulness in the future for the employment of urotropin. It has hardly, he thinks, received sufficient notice hitherto from the profession in England, but he is confident that its claims will be readily taken into account when it comes to be more generally known. In the hope of such a result he is glad to be able to add his testimony to its worth as a valuable therapeutic agent for combating a troublesome class of cases.

THE USE OF MERCURY IN THE TREATMENT OF CARDIAC FAILURE DUE TO ARTERIOSCLEROSIS.

MORISON writes in *The Lancet* of June 30, 1900, on this very important subject.

As regards the efficacy of mercury administered in combination with digitalis and under the circumstances under consideration, Sir Thomas Watson, discussing the treatment of "anasarca," remarks: "Sometimes a combination or farrago of diuretic substances proves more efficacious than larger doses of any of the ingredients administered singly, and the operation of some of these combinations is undoubtedly quickened or exalted in many instances by the addition of mercury—a fluidrachm of the official solution of the bichloride in each dose in a mixture, or small quantities of calomel or of blue pill when the medicines are given in a solid form. A very useful pill of this kind, much recommended by the late Dr. Baillie, consists of three or four grains of the pilula hydrargyri, mixed up with one grain of the dried powder of squills, to be given twice or thrice a day. Dr. Baillie states that squills and digitalis are much less effectual by themselves than when combined with mercury."

The formula of this pill, which is given in the second and third editions of Dr. George Gregory's Elements of the Theory and Practice of Physic, is three grains of pilula hydrargyri and one each of powder of squills and of digitalis, to be taken at midday and in the evening. As the formula is

not given in the first edition, which was published in 1823—the year in which Matthew Baillie died—it is probable that the usual posthumous extension of Gregory's armamentarium took place after the death of his great and good contemporary. But Baillie would have been the first to acknowledge that the principle of the combination of co-operative elements was as old as the world itself, and exemplified by all the healing waters known to bathers and physicians. Withering, indeed, writes of the therapeutic relation of squills to digitalis thus: "Next to the lancet, I think nothing lowers the tone of the system more effectually than the squill, and consequently it will always be proper in such cases to use the squill, for if that fail in its desired effect it is one of the best preparations to the adoption of the digitalis."

We now know that the active principle of squills acts much in the same manner as that of digitalis, and that neither "lowers the tone of the system" except when administered in excessive doses or after too protracted use; but the above quotation shows that Withering's practical sagacity had detected the aid which one at times could lend the other. On page 70 of the same essay a prescription of Withering is given in which two grains of "grey mercury" was combined with twenty grains of powdered digitalis leaves and divided into fourteen pills, of which one was to be taken twice a day—evincing, surely, quite a modern timidity of mercury. Morison has not, however, met with any actual combination of all these ingredients in one pill in Withering's work, and we may therefore assume that the attribution of that combination to the clinical acumen of Baillie is correct, but he has not so far met with a note of it in his works, which are well worthy of perusal even to-day. The addition of a grain of hyoscyamus—the "Guy's pill" used at the Great Northern Hospital—was probably not intended by its originator or originators to be other than a corrective to the intestinal effects of the other drugs, but it is just possible that as a drug of the belladonna group it may not be without influence upon the circulation when administered for a length of time. Morison has, indeed, occasionally used extract of belladonna in the pill instead of hyoscyamus on this principle, and especially when there is a bradycardial rather than tachycardial tendency in the arrhythmia so frequently associated with arteriosclerosis. The beneficial influence of mercury in the combination is, he thinks, clinically indisputable, but the discussion of the precise manner of its operation might lead to much, and perhaps not very useful, speculation.

A fact, however, among the effects of mercurials to which Sir William Broadbent (to whom Dr. Morison attributes a considerable share in the revival of the medical use of mercury) attaches much importance, is its lowering the tension of the pulse. How this is brought about—whether by the elimination from the blood of waste material which has a spastic effect upon the arterioles, or by direct dilatation of the peripheral vessels in the process of its own elimination—it is not necessary at present to inquire and is very difficult to determine. That the permeability of peripheral vessels by a lessening of their resistance is secured appears to be clinically demonstrable. This being so, it is not difficult to imagine, and is indeed permissible to suppose, that the combination of mercury (a peripheral dilatant) with digitalis and squills (which are in part central stimulants as well as peripheral contractors) constitutes it a rationally indicated adjuvant to the action of the latter in cardiac failure due to arteriosclerosis. Like many other happy therapeutic combinations, however, it was probably at first employed in this connection empirically, even by men of the caliber of Withering and of Matthew Baillie.

THE TREATMENT OF MALARIA.

Wood gives the following *résumé* in the *University Medical Magazine* for July, 1900, on this topic:

The question of the effect of quinine on the plasmodium malariæ has been studied by Monaco and Panichi (*Archives Italiennes de Biologie*, xxxii, p. 378) in a new manner. These observers took a drop of blood from a malarial patient, and after having observed the life changes of the parasite in the blood and the influence of an isotonic salt solution, proceeded to note the effect of various quinine solutions at the different periods of the life of the plasmodium. Their studies were made on organisms from cases of the tertian and quartan types. They divide the life of the malarial parasites into four stages: (1) Young forms; (2) adults (occupying two-fifths of the blood-corpuscle); (3) ripe forms (occupying the whole corpuscle); and (4) the sporulating forms. If a drop of a 1-to-1500 solution of quinine bisulphate—correspond-

ing to a dose of three grammes (45 grains) for a man — be brought in contact with blood containing the youngest form, the parasite contracts with tremors of the pseudopods and the pigment granules seek the center. In a short time, however, the pigment returns to the periphery and the parasite behaves as before medication. In the adult stage the quinine caused the pseudopods to be drawn in, the pigment to collect centrally, and then the plasmodium suddenly bursts out of the corpuscle as though shot out with a spring. The ripe forms do not pass out of the corpuscle but become shrunken, some of the pigment granules escaping, however, into the blood serum.

They further found that too large doses did not cause the microorganism to pass out of the corpuscle, but seemed to paralyze it; too small doses acted as a stimulant. They reasoned that quinine does good by causing the parasite to pass out of the favorable host — the corpuscle — into the serum, which is more deleterious to its growth, and that therefore it is improper to administer quinine in too large doses. These conclusions seem, however, not entirely justified, because it is evidently more beneficial to kill the plasmodium at once rather than to have a certain number escaping death in the serum to return and breed another generation. Their research has, however, a most important bearing on the question as to when to give quinine. It seems demonstrated that the young forms are the most resistant, and that the oldest ones are probably the most susceptible to quinine. In accordance with this Monaco and Pinichi found that of plasmodia taken from the blood at various stages of malaria, those were most susceptible that were obtained just before the acme of the fever, and that from then on into the middle of the apyretic interval the parasites became more and more resistant. These experiments therefore confirm the common practice of giving the quinine immediately before the expected attack.

Of the more recently suggested substitutes for quinine, the one which at present appears to give most promise of usefulness is methylene blue. Röttger (*Deutsche Med. Wochenschrift*, xxii, 237) has used it in seven cases with good results. He gave it in doses of 0.1 gramme (1½ grains) six to eight times a day. The fever did not stop abruptly, as it does under the cinchona treatment; but Röttger disagrees with Guttman, who claims that this is a sign of essential difference between the action of the two drugs. He argues that when we administer quinine in small doses repeatedly we obtain an equally slow defervescence. Nine days was the longest period necessary before the disappearance of subjective symptoms, but the treatment should be continued beyond this until the spleen has returned to normal size. He had only one relapse. There were no unpleasant secondary effects, except in one case some polyuria with strangury, which was easily controlled by nutmeg. The gastric disturbances that have been reported as due to methylene blue Röttger attributes to impurities.

Ollwig (*Merck's Archives*, 1899) has also used methylene blue in malaria, and concludes that it is somewhat less efficacious than quinine, but more powerful than any other drug in acute ague.

Parona (*Il Policlinico*, v, 19) reports excellent results obtained in three cases of chronic enlargement of the spleen, cured by hypodermic injections of iodo-iodide solution. The cases were very refractory ones which did not respond to quinine, bitter tonics, arsenic, and iron. The formula used was: pure iodine, 0.25 gramme; potassium iodide, 2.5 grammes; guaiacol, 2.5 grammes; glycerin, 25 grammes. This was injected daily into the cellular tissues of the left flank under proper aseptic precautions, until the urine and saliva showed excessive iodine.

THE TREATMENT OF HYDROCEPHALUS BY CRANIECTOMY.

E. P. Davis writes in the *Archives of Pediatrics* for July, 1900, on this interesting topic. The patient, whose history is here reported, was an infant aged six months when seen for the first time. The parents had two other children who did poorly during the first six months of life. Before the birth of this child the mother was in excellent health, and the birth was spontaneous. She nursed the child for three weeks, when she had what was described as "a bilious attack," and the secretion of milk failed. The child was then fed upon starchy foods. It weighed at birth five and a half pounds, and at six months nine pounds. It was brought for treatment because it was restless, had a poor appetite, with dyspepsia, and did not seem to be gaining.

On examination, the child's length was 54 centimeters. The circumference of its chest was 34 centimeters, and the circumference of the cranium 41 centimeters. The contour

of the cranium was characteristic of intrauterine rachitis, the child's flesh was flabby, and it was restless, fretful, and weak. There were no signs of teeth, and the child had a double inguinal hernia. Three months after it was first seen its length was 55 centimeters, its chest 35 centimeters, and the circumference of the cranium 43 centimeters. The child had gained somewhat in weight during the summer at the seashore. Five and a half weeks after this the circumference of the child's cranium was 47 centimeters. It was decidedly stupid and evidently suffering from intracranial pressure, although its digestion was much better. Its stupor had alarmed the parents, who had also observed the continuous enlargement of the cranium. When the question of treatment was considered, the parents were informed that medicinal treatment offered nothing, but operative treatment gave a possibility of temporary improvement. They accepted the latter, with a full understanding of its risks.

The child was transferred to the Jefferson Hospital, and was seen by Dr. W. W. Keen in consultation. Dr. Keen was willing to drain the right lateral ventricle, although he expressed a guarded opinion in giving a prognosis. The effort was made in this case to insure continuous drainage, and not simply to withdraw fluid from the ventricles. Accordingly the child was anesthetized, and under antiseptic precautions the cranium was trephined at one side of the sagittal suture and in the parietal bone of the right side. This was accomplished without difficulty, although the cranial bone seemed thinned by the pressure within. A sterile silver cannula containing a stylet was then passed through a slit in the membranes downward until the ventricle was reached, when the stylet was withdrawn. A stream of serous fluid immediately followed. Two strands of sterile silkworm-gut were then introduced through the cannula and the cannula withdrawn. The tissues were closed as rapidly as possible by suture, leaving the ends of the silkworm-gut emerging through the flaps. Pressure was made over the site of drainage by antiseptic dressings. The child collapsed and did not recover, although it lived for some hours after the operation.

The unfavorable feature about the operation was the fact that considerable fluid escaped. There was no hemorrhage nor apparent shock.

The bad result in this case was by no means unexpected, although the circumstances seemed to warrant an attempt to relieve the patient. The literature of the subject does not give reports that would lead one to hope for permanent recovery after the operation. In the face, however, of the anxiety of parents to do all possible for such children, the attempt is justifiable in the absence of any other known method of treatment.

PREVENTION, MANAGEMENT, AND EARLY DIAGNOSIS OF SCARLET FEVER.

CRANDALL is reported in the *Archives of Pediatrics* for July, 1900, as having expressed the following views, he having read a paper with this title, in which he pointed out the better opportunity one had to employ prophylaxis in scarlet fever than in measles, where the period of contagion commenced several days prior to the appearance of the eruption. In ninety per cent of the cases of scarlet fever the period of incubation was between two and six days. The occurrence of vomiting, fever, sore throat, and a rapid pulse was strongly suggestive of scarlet fever. In his experience, vomiting had been a most constant symptom, and had occurred suddenly. At the outset it is not uncommon for the pulse to reach 150, and if with these two there is associated a redness of the fauces, the physician has good grounds in the early stages for making a provisional diagnosis of scarlet fever. Some of the recent cases of "la grippe" in New York City had exhibited a mild sore throat and an eruption which at the outset had strongly suggested scarlatina. The so-called "strawberry tongue" is one showing reddened spots on a roughened and red ground, and not, as so many seem to think, the tongue showing red spots on a ground of white fur. In any case, though quite characteristic, it is developed too late as a rule to be of much aid in making the diagnosis. It is most important to determine as accurately as possible the length of time the contagion is active, yet this is often no easy task. It is often much longer than the proverbial forty days, and is not determined solely by the presence or absence of desquamation. It is now known that the presence of any purulent discharge, such as exists in otitis, pharyngitis, and cervical adenitis after scarlatina, means that there is still danger of contagion. Again, in some of the mild cases, desquamation is very slight, lasts an unusually long time, and is apt to be overlooked unless the hands, and particularly the

fingers, are closely scrutinized from time to time.

The question of the advisability of closing the schools in a given epidemic should be decided by the conditions prevailing in the particular community. For example, in a rural district, in which most of the families are acquainted, the closing of the schools would probably help to check the spread of the disease; on the other hand, in New York City, such a step, by leading large numbers of children to play together on the streets, would have directly the opposite effect. The physician should not be unmindful of the ease with which he can carry scarlet fever and similar diseases to his own or to his neighbors' children, and in order to obviate this should make it a practice to keep in the sick-room of each patient suffering from such disease a cheap cotton gown which he wears while in the room, and discards at the close of the visit. Most families, instead of objecting to this custom, would be favorably impressed with the care and prudence of their physician, and the latter would be protected from unpleasant criticism should one of these diseases happen to break out mysteriously in one of his families at a time when he was attending others sick with the same disease.

Concerning the matter of inunctions, the author recommends that they be used during the stage of eruption, employing vaselin, lanolin, or a mixture of lanolin and cold cream. Cheap grades of yellow vaselin, and indeed any ointment likely to prove irritating, whether from contained antiseptics or by reason of proneness to rancidity, should be avoided. It is well not to use carbolated vaselin over very large areas, because in this disease, the skin not being in a normal state, there is a chance that the carbolic acid might be absorbed in too large quantity. Some persons complain a good deal of the itching of the eruption; here it would be advantageous to use a five-per-cent boric acid ointment. Anything which tends to irritate the skin is apt to unnecessarily prolong the period of desquamation.

THE MEDICAL TREATMENT OF HEART DISEASE.

FRANZ DORN (*Berliner Klinik*, June, 1900) calls attention to the fact that the modern treatment of cardiac disease is so largely physical and dietetic that the study of the appropriate drugs has fallen somewhat into the background. He details the remedies used in Mendelssohn's clinic and their particular indications. In palpitation from mere nervous excitability cold-water bandages or ice-bags are not always effectual; in such circumstances a combination of valerian with sodium bromide is recommended. Not infrequently actual valvular disease is complicated by this heightened excitability, which may act unfavorably upon compensation; for this the author also gives valerian with aqua laurocerasi, belladonna, or bitter almonds. In mild cases of valvular disease an infusion of the leaves of nerium oleandri may be used as a substitute for digitalis; it is claimed that this quiets the heart and diminishes the pulse frequency, while at the same time it is very well borne. It is particularly indicated in the early stages of compensatory failure; later on digitalis is indispensable, and is, according to Dorn, best given as Traube recommended—that is, with quinine. The latter appears to exert a favorable influence upon the subjective symptoms. Where, however, these—for example, paroxysmal dyspnea—are not so easily kept under, narcotics should be used; the author strongly advocates a hypodermic injection of morphine in the evening to insure a good night. Where the kidneys are affected sulphonal or trional must be substituted. In the special dyspnea of aortic valvular disease, with its wearing cough, the author advocates the administration of heroin, or, if that is not satisfactory, codeine. He treats dropsy by a diuretic mixture containing digitalis, strophanthus, citrate of caffeine, acetate of potash, and licorice; he has sometimes found diuretin of great value in combination with one or other of these drugs. In chronic myocarditis and fatty heart—most cases of which he believes to arise from alcoholic excess—Dorn advises regulation of the diet, rubbing with cold, and spirituous applications, and the administration of quinine and iron. When these fail the tone can often be restored by the nerium infusion mentioned above.—*British Medical Journal*, July 14, 1900.

COMPULSORY VACCINATION OF CHILDREN IN PUBLIC SCHOOLS DECLARED LEGAL IN PENNSYLVANIA.

Attention to this important decision is editorially noticed in the *Journal of the American Medical Association* of July 21, 1900.

An important decision as to the legality of compulsory vaccination of schoolchildren in Pennsylvania has just been rendered after a month's advisement by President Judge Pennypacker and Judge Sulzberger in the Court of Common Pleas in the city of Philadelphia. In order to test the question whether or not children must be vaccinated before entering the public schools, a citizen has brought a mandamus proceeding against the principal of one of the schools to compel the admission of his daughter, who had never been vaccinated, as a pupil. The respondent filed a return, in which she averred that she was required to refuse admittance under the rules of the Board of Education and an Act of Assembly, both of which require the vaccination of children prior to admission to the public schools. To this a demurrer was filed, alleging its insufficiency at law. After argument, in which the merits of vaccination and the right of the legislature and of the Board of Education to make such a regulation as the one in question were discussed at length, a decision was rendered overruling the demurrer and entering judgment for the defendant. While to an open and unprejudiced mind there can be no room for any other opinion, the decision just rendered is a most important one, and it should have a wide-spread and salutary influence. It not only concedes to the State and to boards of education the authority of protecting those who have been entrusted to their care from a virulent and loathsome disease, now almost entirely eradicated by means of one of the most beneficent discoveries ever conferred upon mankind, but, more than this, it again stamps with deliberate judicial approval the preventive practice of vaccination.

TREATMENT OF SCARLATINAL NEPHRITIS.

Dr. Robert Coleman Kemp recently read a paper on this subject, which is reported in the *Archives of Pediatrics* for July, 1900. He looks upon scarlatinal nephritis as a disease *sui generis*. It is a diffuse nephritis, developing, as a rule, about the third week, and accompanied by general anasarca. The urine contains a large quantity of albumin and numerous casts of all varieties. Dr. William H. Thomson had first called his attention to the fact that often the first indication of the onset of this affection is a sudden fall in the specific gravity of the urine. This initial fall is followed in a short time by a sudden rise in gravity, associated with a diminution in the total quantity of the excretion. At this stage there is engorgement of the renal vessels, and no time should be lost in instituting active treatment. Frequently, before the appearance of albuminuria, there would be a marked increase in the urates. Vomiting, diarrhea, headache, and twitchings of some of the muscles often precede uremia. Rapid enlargement of the liver is an exceedingly unfavorable sign, usually pointing to a fatal issue. The author advocates the administration of oxygen gas to these cases of scarlatinal nephritis, claiming that it is not only a good cardiac stimulant, but aids materially in eliminating toxins. Another useful measure is enteroclysis, using a saline solution at a temperature of 110° to 120° F. for fifteen or twenty minutes at a time, and as often as three or four times a day. Experience shows that, as a rule, from three to five times as much urine is secreted as the quantity of saline solution introduced. Carbonated baths at a temperature of 98° to 100° F. are also useful.

Dr. Henry Dwight Chapin, in discussing the foregoing paper, expressed the opinion that the scarlatina of to-day, in this part of the world at least, is of a milder type than that prevalent a dozen or more years ago. A sign of some diagnostic value is the appearance on the second or third day of a peculiar red, beefy appearance of the edge of the tongue, along with prominence of the papillæ. Where it is impossible for the family to provide a separate attendant for the sick person, one of the family should take charge, and should wear an old gown or wrapper in the sick-room, and should wash and change to other clothing whenever coming from the sick-room to mingle with the others in the family. According to his experience, the first clinical sign of nephritis is puffiness about the eyes.

THE USE OF BORAX AND FORMALDEHYDE AS PRESERVATIVES OF FOOD.

In the *British Medical Journal* of July 7, 1900, Halliburton tells us that recently, when he was giving evidence before the Food Preservative Committee of the Local Government Board, he urged that the use of foreign substances as preservatives of foodstuffs should be abandoned, and if possible replaced by a more wholesale use of the

method of cold transport and storage. He took this view partly on general grounds, which were the following: (1) An antiseptic is inimical to the life of the organisms that cause putrefaction; it cannot, therefore, be harmless to the vital processes in the higher animals. (2) Numerous clinical observations have been recorded which show that dyspeptic and other troubles follow the use of foods which have been treated with commonly employed preservatives like borax. (3) Even if, as in the case of boric acid and borax, the poison is not cumulative, the continuous passage of foreign substances through the kidney cannot be beneficial to those organs.

It is perfectly true that most of us are probably taking small doses of antiseptics in our foodstuffs without any obviously bad results; those who suffer are peculiarly susceptible to such drugs, but as such cases are by no means uncommon, it appeared to him of sufficient importance to recommend legislation in the direction he has indicated. If, on the other hand, trade influences are too strong, at least articles mixed with drugs should be labeled as such, and not sold as fresh foods. In this way those people who are peculiarly susceptible to any particular antiseptic could avoid it.

In any question of this kind one has to balance the good and the bad—that is to say, whether more harm will result from the products of putrefaction or from the antiseptic used to hinder or prevent putrefaction. But if the method of cold storage were made compulsory no such question could arise, for putrefaction would be prevented without foreign admixture. Halliburton was particularly questioned whether on physiological grounds there was any reason why the sterilizing of milk by heat could give rise to any toxic material. This he answered unhesitatingly in the negative. The milk proteids are rendered somewhat more difficult of digestion by heat, as in the cooking of all albuminous foods. But most gastric juices are able to grapple with this difficulty. Of course, in cases of feeble digestion, raw or underdone meat and uncooked milk are preferable to foods which have been cooked too much, but there are no grounds for supposing that, in the case of milk, heating will split off from its proteid matter anything of the nature of a toxin.

The special ground on which the author opposes the use of antiseptics arose from some experiments he had done with artificial digestive mixtures. These experiments were conducted to test the action of borax and formaldehyde on digestion. He selected these because they are the antiseptics most frequently employed as food preservatives. The experiments show that the antiseptics named act prejudicially on the digestive enzymes even in the doses which are employed as preservatives, and this furnishes an additional reason why their use should be prohibited. The following are the details of the experiments, the results of which he was able briefly to indicate before the committee:

Boric Acid and Borax.—His attention was first called to the use of these substances in milk some years ago by Prof. F. J. Allen, of Birmingham. Professor Allen noticed many cases of malnutrition in infants fed on such milk, particularly if borax was the adulterant. The condition passed off when pure milk was used. On examining the matter, Professor Allen found that borax prevents the normal action of rennet. The process of milk digestion in the stomach may be briefly explained as follows: Milk is subjected to the action of two ferments in the gastric juice; one of these is called rennet, the other pepsin. The preliminary breaking down of the molecules of caseinogen (the chief albuminous constituent of milk) by rennet is evidenced to the eye by the formation of a curd; this appears to be necessary before the subsequent peptonization by pepsin can be properly carried out.

In repeating these experiments Dr. Halliburton has limited himself to observing the influence of borax and boric acid on the action of rennet. The following will serve as typical of numerous experiments he has made; all show analogous results:

Fresh cow's milk was divided into portions of 100 cubic centimeters each. To No. 1 nothing was added; to No. 2, 0.05 gramme of boric acid was added; to No. 3, 0.1 gramme of boric acid was added; to No. 4, 0.15 gramme of boric acid was added. These are quantities comparable to those used generally to keep milk sweet.

After the lapse of an hour, during which time the milk was well shaken with the acid, much was found to be undissolved, even in specimen No. 2. One cannot therefore say that any more boric acid had passed into solution in those specimens to which more of the solid had been added. Boric acid is a comparatively insoluble substance.

From all four specimens samples were taken and treated with a few drops of rennet extract. A well marked curd occurred in all in less than a minute at 40° C.

The small amount of boric acid which will dissolve in milk in an hour will therefore not prevent, or even markedly hinder, rennet activity.

Halliburton kept the remainder of the specimens—2, 3, and 4—for a few hours longer, in order to test the matter again when all the boric acid had dissolved, but he found that still there was no hindering of rennet action.

In spite of the boric acid the milk turned sour in a little over a day.

These experiments do not prove very much. They show what was previously well known, namely, that boric acid by itself is a very indifferent inefficient antiseptic, and has but little if any inhibiting power over the unorganized ferment—rennet—selected for experiment. The cause of this feeble action both on organized ferments (microorganisms) and unorganized ferments or enzymes is probably to be partly explained by its difficulty of solution. Halliburton says he imagines it is for this reason that boric acid alone is seldom used as a preservative for milk; the preparation known as "glacialin" is what is usually employed. Glacialin is a mixture of boric acid and borax, and it can hardly be doubted that it is the borax which acts as the principal antiseptic. More interest and importance, therefore, must be attached to experiments with borax.

As before, the milk was divided into portions of 100 cubic centimeters each. At the end of two days the unadulterated milk had turned sour; the specimens to which borax was added were still sweet.

To No. 1 nothing was added; to No. 2, 0.05 gramme of borax was added; to No. 3, 0.1 gramme of borax was added; to No. 4, 0.15 gramme of borax was added.

On testing samples of each with rennet at 40° C. half an hour after the borax had been added, No. 1 coagulated in about thirty seconds; No. 2 coagulated in about two minutes; Nos. 3 and 4 did not coagulate at all.

These experiments show that 1 part of borax in 1000 of milk completely inhibits rennet activity, and even smaller proportions will delay its action.

Formaldehyde.—This substance is most efficient as an antiseptic, but Dr. Halliburton says he cannot agree with Mr. A. H. Allen that it is the least objectionable of the preservatives of food. Its very efficiency in counteracting ferment activities renders it particularly objectionable. The aqueous solutions of formaldehyde are very irritating to the skin. He noticed this even with solutions containing only 5 parts in 10,000 of water; the skin is roughened after dipping the fingers into it for a few moments, and any little abrasions that may be present in the skin are rendered intensely painful. Cervello states that by painting the ear of a rabbit three times a day with it ulceration and gangrene are obtained within a week. From this it will be gathered that though formalin has but little taste, it can nevertheless not be harmless to the mucous membrane of the alimentary canal, which is far more easily injured than the external skin. Bruni has shown that in animals vomiting is produced by very dilute solutions.

If the drug is introduced into an animal by intravenous injection, the red corpuscles of the blood are disintegrated, respiration is disturbed and may stop, convulsions and coma may also supervene. Its power as an antiseptic is, however, so marvelous that the experiment has been tried of treating consumptive patients with air charged with its vapor. Physicians have not entirely relinquished this method of treatment, for it has been stated that by mixing the vapor with other substances the air may be rendered respirable; but it has been fully shown that an admixture of air with the vapor of formaldehyde only is so irritating, and after a short time so impossible, that more harm than good has been the result.

The experiments Dr. Halliburton performed himself were to test the influence of formaldehyde in digestion. He says he could wish that they were more complete, but they at least show that substances treated with even weak solutions are rendered very indigestible. They may be divided into four categories: the influence of formaldehyde (1) on gastric digestion of proteid; (2) on the pancreatic digestion of proteid; (3) on the pancreatic digestion of starch; (4) on the curdling action of rennet. He only quotes illustrative experiments under each of the four heads.

1. *Influence of Formaldehyde on the Gastric Digestion of Proteid.*—Artificial gastric juice was prepared by adding Benger's liquor pepticus to 0.2 per cent hydrochloric acid in the proportion 1 to 5. Fibrin was taken as the proteid or albuminous matter to be digested. The fibrin was divided into a number of portions and placed in various strengths of formaldehyde for two or three days. Even the weakest solutions employed kept the fibrin perfectly free from decomposition, but in all cases it was rendered very hard.

Equal quantities of each were subjected to the action of the same volumes of the artificial gastric juice in a warm oven at 40° C. The end of digestion was considered to be reached when all lumps had passed into solution. The following table gives the results:

Experiment A.

1. Fresh fibrin. Digestion complete in forty-five minutes.
2. Fibrin placed in 0.05-per-cent formaldehyde for two days. Digestion complete in sixty-five minutes.
3. Fibrin placed in 0.10-per-cent formaldehyde for two days. Digestion complete in sixty-five minutes.
4. Fibrin placed in 0.25-per-cent formaldehyde for two days. Digestion complete in three hours.
5. Fibrin placed in 0.50-per-cent formaldehyde for two days. Digestion complete in seven hours.
6. Fibrin placed in 1.00-per-cent formaldehyde for two days. Digestion complete in twenty-four hours.
7. Fibrin placed in 2.00-per-cent formaldehyde for two days. Hardly any digestion at end of twenty-four hours.
8. Fibrin placed in 4.00-per-cent formaldehyde for two days. Hardly any digestion at end of twenty-four hours.

Experiment B.

1. Fresh fibrin. Digested in thirty minutes.
2. Fibrin placed in 0.05-per-cent formaldehyde for three days. Digested in sixty minutes.
3. Fibrin placed in 0.10-per-cent formaldehyde for three days. Digested in ninety-five minutes.
4. Fibrin placed in 0.25-per-cent formaldehyde for three days. Digested in three hours.
5. Fibrin placed in 0.50-per-cent formaldehyde for three days. Digested in five hours.
6. Fibrin placed in 1.00-per-cent formaldehyde for three days. Had not digested at six hours, when the observation was stopped.

These experiments show that a percentage of 0.5 renders gastric digestion almost impossible; and that a percentage of over 0.05 considerably delays it.

2. *Influence of Formaldehyde on the Pancreatic Digestion of Proteid.*—These experiments were conducted in a corresponding way and led to a corresponding result. The fibrin, after a two days' stay in various strengths of formaldehyde solution, was subjected to the action of artificial pancreatic juice at 40° C., and the time of digestion noted. The artificial pancreatic juice was made by mixing Benger's liquor pancreaticus with one-per-cent solution of sodium carbonate in proportion of 1 to 4. The results are even more striking than in the case of gastric digestion. It will only be necessary to quote one illustrative experiment:

1. Fresh fibrin. Digestion completed in thirty minutes.
2. Fibrin previously placed in 0.05-per-cent formaldehyde. Digestion completed in ninety-five minutes.
3. Fibrin previously placed in 0.10-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.
4. Fibrin previously placed in 0.20-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.
5. Fibrin previously placed in 0.50-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.
6. Fibrin previously placed in 1.00-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.
7. Fibrin previously placed in 2.00-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.
8. Fibrin previously placed in 4.00-per-cent formaldehyde. No trace of digestion at end of twenty-four hours.

3. *Influence of Formaldehyde on the Pancreatic Digestion of Starch.*—A one-per-cent solution of starch was prepared and divided into portions of five cubic centimeters each. To some of these were added two drops of formaldehyde of various strengths, and to all a few drops of Benger's liquor pancreaticus. All were placed in the warm bath at 40° C., and the time noted when the starch had disappeared—that is, owing to its conversion into dextrin and sugar, it ceased to give a blue color with iodine. In the specimens to which no formaldehyde had been added the starch reaction was lost in one minute. In those to which formaldehyde had been added the time was prolonged to three to six minutes, according to the strength of the reagent added; even so weak an addition as two drops of a 0.1 solution of formaldehyde increased the digestion time to three minutes.

4. *The Action of Formaldehyde on the Rennet-curdling of Milk.*—The proportion in which formaldehyde is stated to be used in the milk trade is roughly two drops of formalin (40-per-cent formaldehyde) per fluid-ounce.

In all cases such an addition to milk greatly delays rennet action. Various specimens of milk tested by Dr. Halliburton differed in the amount of delay. In some cases the amount added was sufficient to completely inhibit the action of the ferment, but in all cases the curd when it did form was very slow in making its appearance, and was never firm, as it is in unaltered milk. Much smaller doses of formaldehyde had a similar though less marked effect; thus a few drops of a 0.2-per-cent solution of formaldehyde per ounce of milk raised the time of onset of curdling from twenty seconds to one and a half minutes.

Dr. Halliburton has thought it desirable to publish his results as the question is now prominently before the public, and every additional piece of evidence has thus some value. Similar experiments have been published previously by others—for example, by Rideal and by Boyce—and although there are some differences of detail both of method and results between these experiments and his own, they all tend in the same general direction.

These experiments appear to Halliburton to prove conclusively the injurious effect produced by even minute quantities of certain preservatives on the activity of the enzymes concerned in ordinary digestion, and to furnish a cogent reason why the use of these substances should be prohibited for the preservation of food materials.

It will be noticed that all his experiments were performed *in vitro;* they require to be amplified by experiments *in vivo.* Artificial digestion experiments, however, as a rule form a very good guide to what occurs in natural digestion.

HYDRIATICS IN THE PROPHYLAXIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

Editorially the *Journal of the American Medical Association* of July 21, 1900, tells that the use of water as a therapeutic agent is probably not as general as it should be, and it would appear that this measure would be especially indicated in cases of chronic disease attended with impaired nutrition and wasting. The problem in the treatment of tuberculosis is essentially one of nutrition. While the tubercle bacillus is the exciting cause, the conditions must be rendered favorable for its invasion and multiplication. The prophylaxis will, therefore, consist principally in measures directed toward rendering the conditions unfavorable, and the treatment should have the same aim. To this end it is believed that hydriatic measures, intelligently employed, are capable of materially contributing. They find an ardent advocate in this connection in Professor Winternitz, of the University of Vienna, who has had an enormous experience in this field of therapeutics, and who discusses (*Berliner Klinische Wochenschrift*, 1900, No. 18, p. 384) some of the indications for, and the rationale of, their employment. He points out that tuberculosis does not develop suddenly. Deficient innervation, impaired circulation, various nutritional disturbances, especially gastric and intestinal disorders, anemia, etc., predispose to its occurrence, and every agent that antagonizes these conditions possesses prophylactic value. Ordinary cold water acts as a powerful tonic, improving the appetite, increasing the weight, enriching the blood, augmenting muscular power, stimulating innervation, and accelerating metabolism. It antagonizes retrogressive and favors constructive metamorphosis. It fortifies the body against the undesirable effects of cold. The systematic training of the sensory peripheral nerve-terminations and of the vasomotor nerves overcomes the great susceptibility on the part of the tuberculous patient to catarrhal affections. Cold water exerts a beneficial influence upon the local morbid process in the lungs, inducing increased activity in the flow of the blood to and from these parts, and improving the circulatory conditions generally. These results are brought about by invigorating the action of the heart, improving the tone of the vessels and the tissues, inducing collateral or active hyperemia in the affected organs, and strengthening the entire organism, particularly innervation and circulation. Hemoptysis, hectic fever, and night sweats are also favorably influenced by hydrotherapeutic measures. The plan of procedure pursued by Winternitz is directed to securing prompt and complete reaction from temperature as low as can be borne, in conjunction with appropriate mechanical and chemical irritation. Stimulating affusions are also applied over the diseased parts, and thermic and mechanical symptomatic treatment is directed toward the fever, the night sweats, hemoptysis, and cardiac and circulatory manifestations.

THE CURE OF TABES DORSALIS.

Editorially the *Journal of the American Medical Association* of July 21, 1900, says that in the records of quacks, as well as in the minds of neurologists at large, there is a wide margin devoted to the uncertainties of the diagnosis of locomotor ataxia. Many of the former class wax wealthy on the reputations, honestly acquired, of a single case, pronounced locomotor ataxia by the ablest nervous experts, and many patients pursue the phantom of beef and hot water which has been incident to the getting well of certain cases pronounced incurable by the specialist. The neurologist is sometimes treated to the shock of finding such a cure in one of his formerly classified incurable cases, and immediately goes over his notes to find out where he made his blunder. In the light of our present knowledge there would seem to be no doubt—and this is recognized in our text-books—that there exists a form of neuritis, often of alcoholic origin, which gives rise to many of the typical symptoms of locomotor ataxia. It is in this category that the charlatan reaps his harvest and the neurologist his mortification.

We are indebted to Leyden for the first accurate and thorough portrayal of the picture of polyneuritis, from a clinical as well as from a pathological standpoint. Before his time it was the fashion to follow Charcot's dictum, laid down in 1880, that atrophic paralyses were always associated with changes in the ganglion cells of the anterior horns, and it was reserved for Eichhorst, Joffroy, and Eisenlohr to demonstrate that such muscular conditions might arise and yet the anatomical changes in the spinal cord be wanting. But it was Leyden's critical instinct that enabled him to make a distinction between the symptom-complex of a polyneuritis and an anterior polymelitis, with which latter affection the former was so persistently associated in the minds of the neurologists. At the present time there is little ground for confusing these pathological entities.

In a recent paper, v. Hönig (*Deutsches Archiv f. Klin. Med.*, vol. lxvii, p. 123) outlines the history of the development of our knowledge bearing on the subject of polyneuritis, and considers in particular the ataxic form of alcoholic polyneuritis. He believes that from a clinical point of view etiological classification is the most satisfactory one, and distinguishes, as do most modern writers, three types of polyneuritis: Primary polyneuritis, having its origin from exposure to cold or from overstrain; secondary polyneuritis, following many of the infectious diseases; and toxic polyneuritis from lead, arsenic, mercury, alcohol, etc. There is no doubt that of these alcohol plays the most important rôle. Of the different types of alcoholic polyneuritis Hönig describes three, motor, sensory, and ataxic, the first being characterized by paralytic phenomena, the second by modification of the sense organs, and the third typified by marked incoordination of the voluntary movements of arms and legs. With reference to the frequency of the occurrence of these, statistics indicate that the paralytic form is the most common, the sensory type the least, and the ataxic type occupies a middle ground.

The author's search through literature—and, from his bibliographical references, it must have been a most superficial research, since hardly any mention is made of American writers, notably Dana—permits him to collect forty cases of ataxic alcoholic polyneuritis or false tabes. In most of these all the extremities were more or less involved; in many, although not all, the symptoms developed with rapidity; Romberg's symptom was present, and in all save two the patellar reflex was abolished. One symptom—diminished or absent light reflex associated with the accommodation reflex, the Argyll-Robertson pupil—was noted to obtain in three cases. This symptom has been held to be absolutely differential in the diagnosis of tabes, and it is of import to note its presence in three of these patients with neuritic tabes, all of whom recovered. Other signs present in tabes, such as the girdle sensation, double vision, and the disturbances of the bladder, were uniformly absent. A symptom considered of almost pathognomonic importance was the occurrence of the reaction of degeneration in some of the affected muscles; this, with the absence of the bizarre sensory changes of tabes, should always be borne in mind in the diagnosis of these cases.

In the matter of treatment, much stress is put upon the action of strychnine. This alkaloid, in the hands of the author, given in very large doses, has been of much value in the treatment of this condition, and the reports of the cured cases in literature seem to point much in the same direction.

The contribution is timely, and the caution, that exact diagnosis of this alcoholic pseudotabes would deprive the charlatan of his much-vaunted superiority in the cure of locomotor ataxia, is worthy of consideration.

THE TREATMENT OF GONORRHEA.

The *Medical Record* of July 21, 1900, says that there is no single remedy or procedure capable invariably of curing gonorrhea within a certain limited time. It is pretty generally agreed that an ordinary uncomplicated attack of specific urethritis is not a dangerous disease. The conditions are, however, different at once a complication arises, and in accordance therewith gonorrhea may become a serious or even a grave disorder with unlimited possibilities in the way of sequelæ, of which some of the best known are lymphangitis, adenitis, stricture, orchitis, epididymitis with secondary impotence, prostatitis and suppuration of the prostate gland, cystitis, pyelitis, pyonephrosis, neuralgia, rheumatic affections of the joints and the tendon sheaths, metastases in vital organs (endocarditis), tuberculosis, especially of the genito-urinary organs, neurasthenia of varying severity, and actual psychoses. While it is true that some of these complications and sequelæ, such as stricture of the urethra, may result from the long duration of the disease,

and that others are unavoidable and no cause can be discovered for them, it is likewise true that some complications may be due to improper treatment, or at least their development may be favored thereby. The fundamental principle in the treatment of gonorrhea is that the therapeutic measures employed should be so applied that complications may, so far as possible, be avoided.

With these preliminary considerations Casper (*Berliner Klinische Wochenschrift*, No. 22, 1900) advises against all abortive treatment as not accomplishing the desired object, but favoring the occurrence of complications. The symptoms of the disease do not appear until some days after the gonococci have penetrated the mucous membrane of the urethra. The introduction of instruments into the urethra during the acute stage, so long as a florid, purulent discharge is still taking place, is contraindicated, as are also injections that induce irritation of the urethra or aggravate existing inflammation. Some cases of acute gonorrhea set in with marked inflammatory manifestations, while others are wholly unattended therewith. The latter occur especially in patients who have previously had gonorrhea. In both groups injections may be begun on the first day, but in the first no remedy should be employed that causes irritation or aggravates the inflammatory process, such as preparations of silver. Under these circumstances potassium permanganate may be employed in dilutions of from 1:10,000 to 1:8000. In the less acute stage injections of antiseptic silver salts are useful, and of these the nitrate is the best. This may be employed first in a concentration of 1:10,000, gradually increased to a strength of 1:4000. Both of these are irritating and should therefore never be employed alone, but always in association with astringent, secretion-reducing, and antiphlogistic agents. Thus, a combination of silver nitrate with potassium permanganate is injected first; then silver nitrate and zinc sulphate are subsequently employed; and finally potassium permanganate and zinc sulphate in the last stage. The more frequently the injections are made the better. Attempts have been made to destroy the gonococci and control the secretion by means of a single preparation—zinc permanganate—but this has not proved so successful as the combination of zinc sulphate with potassium permanganate.

Similar principles govern the treatment of acute gonorrheal cystitis. In a large number of such cases improvement and recovery can be brought about by means of diet, rest, diuretics, and balsamics. Should these fail and the second portion of urine voided remain turbid, resort may be had to irrigation through a catheter of the posterior urethra with solutions of silver, but this should not be begun too early. In cases of chronic gonorrhea in which the injections, usually made by the patient, do not reach the affected parts, namely, the posterior urethra and the more superficial layers of submucosa, relief can be afforded with certainty and promptitude by means of instillations according to the method of Guyon, or irrigation with potassium permanganate according to the method of Janet, or a combination of both.

Two varieties of chronic gonorrhea occur that do not respond even to local measures, namely, one that resists treatment of all kinds, and another that yields only so long as the treatment is maintained, but recurs as soon as this is suspended. The first is almost always glandular and infiltrating, and the other is attended with the presence of inflammatory processes in adjacent glands, especially the prostate. The former is rather uncommon and the treatment should be jointly mechanical and chemical. Bougies may be used, dilatation of the urethra may be carefully and judiciously practiced, local urethrotomy may possibly be undertaken, and injections and irrigations should be employed in the intervals.

The proportion of cases of chronic urethritis complicated by prostatitis is quite large. The diagnosis must be based upon the discovery of leucocytes on microscopic examination, in the fluid expressed from the prostate gland through the rectum. The results of treatment in these cases are not very gratifying. The composition of the prostatic secretion is uninfluenced by the use of iodine or ichthyol or electricity, or of injections of hot water, although the subjective symptoms may be relieved by the last. Cauterization has been proposed in the treatment of prostatitis, but the results cannot yet be definitely estimated. The only certain and harmless means of influencing favorably the morbid process consists in systematic massage and expression of the gland. This should be done three times a week for months by a masseur, while urethral injections are made or irrigation is practiced. Should these fail the treatment selected will depend upon whether the process is still infectious or not, namely, whether gonococci are present in the

discharge or not. In the former event the treatment by well known methods should be persisted in until the cocci have disappeared. In the other cases no further treatment may be required at all.

THE BATH TREATMENT OF TYPHOID FEVER.

BAUMLER (Sonderabdruch aus *Deutsches Archiv f. Klin. Med.*) gives the results obtained in 1019 cases of typhoid fever by the cold-bath treatment in the medical clinic of Freiburg-in-Breslau. The mortality, which was 9.32 per cent, or, excluding cases which were moribund on admission, 7.9 per cent, contrasts favorably with Sidney Phillips's estimate, made in 1898, that the average death-rate from typhoid fever was still 18 per cent (*British Medical Journal*, vol. ii, pp. 1485 and 1492). The bath acts not so much by lowering the temperature as by improving the general nutrition through the circulation and nervous system. In a similar case it is rarely possible to lessen the temperature by more than a daily average of 0.7° F. Several factors, however, influence the circulation: the peripheral vessels contract; the difference between the arterial and venous blood-pressure, on which depends the rate of flow in the vessels, is accentuated; and the heart is stimulated mechanically; at the same time the respirations become deeper. For any permanent benefit to be obtained it is essential that the baths should be repeated frequently, so that the flow of blood from the peripheral to the central parts and from the central to the peripheral continues uninterruptedly.

It is an open question whether the bath treatment has any influence on the mortality from intestinal perforation, and on the mortality from hemorrhage it has almost certainly none. Apart from intestinal lesions the greater number of deaths (27.3 per cent) were due to pulmonary complications, though bronchial catarrh was certainly less common than in cases treated without baths. The reason for this is that, owing to the comparatively good general condition of the patient, descending tracheobronchitis from the inhalation of infected material from the upper air-passages — and this is the commonest cause of bronchial catarrh in typhoid fever —is avoided. It is most important to give the patient a drink of water after every feed in order to remove any remnants of milk or other decomposable material. As a rule the heart stands repeated baths excellently, and they are not generally contraindicated in cases complicated by nervous tachycardia, or by a rapid pulse due to pulmonary changes (emphysema, fibrosis, or chronic bronchitis), even when accompanied by great cyanosis. The same is true of cases complicated by anemia and fatty degeneration of the heart, though naturally caution is necessary. Practically the only contraindications are abdominal pain and collapse, and when peritonitis, perforation, or hemorrhage is suspected.

The actual technique used at Freiburg is as follows: Whenever the temperature in the axilla reaches 103° F., a bath at from 82.4° to 75.2° is given. The patient remains in it with his head on an air cushion until he begins to feel cold, generally from eight to ten minutes, the skin, especially over the extremities, being rubbed constantly. After the bath he is wrapped in a dry sheet and covered with blankets; a hot-water bottle is placed at his feet. Some wine is given before the bath, and immediately after it more wine and hot soup. If there is great mental dulness, delirium, or pulmonary catarrh with atelectasis or bronchopneumonia, cold water at 50° F. is poured over the patient for a short time at the end of each bath. Whenever possible, one bath should be given during the night. If the first bath is well borne, and the patient's strength is maintained, the temperature of the bath is soon reduced to 68° F. The diet should be liquid, and not too much alcohol should be given; large quantities relax the arteries and have the same action as the typhoid toxins. When there is great cardiac weakness, camphor is very useful and ammonia may be tried. Antipyretic drugs are only harmful. The patient should be made to drink large quantities of fresh cold water all through the illness.—*British Medical Journal*, July 14, 1900.

HUMAN TEMPERATURE IN DISEASE.

Under this title NORMAN BRIDGE writes in the *Journal of the American Medical Association* of July 21, 1900, that the temptation among practitioners to treat the fever state is almost irresistible, but it should not ordinarily be treated. The wholesale medication so often used for this purpose is mischievous in the extreme.

If unconsciousness or convulsions attend high fever, showing brain involvement and perhaps a paralysis of some of the heat regu-

lators, the temperature should be promptly reduced by baths, for through this act, directly or by some increased elimination it produces, the convulsions usually cease and consciousness returns. It is not true that fever of moderate degree must be brought down at once; fever often endures for a long time with little harm, as is shown in many cases of tuberculosis of the lungs, in which a slight elevation of temperature may persist for months with little impairment of the strength or general physical condition. Slight fevers may occur daily with no cachexia for a long time; the system becomes adjusted to it, and the secreting organs are little disturbed.

A very high fever, or one that produces marked head discomfort, or great restlessness, may not improperly be reduced by means of coal-tar preparations or the application of water. But it is not proved that in typhoid or other fevers the antipyretic drugs for any ordinary febrile temperature have shortened the attacks or increased the percentage of recoveries, and the habit of using them for this purpose has undoubtedly done much harm and very little good.

Probably the drug most extensively used for lowering fevers during the last thirty years—notwithstanding the free prescribing of the coal-tar preparations—is aconite; yet to this hour Bridge says he is ignorant of any proof whatever that this drug can lower the temperature of fever, except by injuriously lowering the vitality of the patient. It may lessen the heat and decrease nervous perturbation; but that is quite another thing.

We often find ourselves considering in the most serious manner as a grave thing the direct effect of a temperature of, say, 102° F., and lasting for a few hours or for a day; and we have connived at the belief by the laity that such a fever is dangerous. If placebos are needful for the morale of the patient, there is no objection to giving some innocuous thing ostensibly for the fever, but for doctors to regard it as necessary on other grounds is unscientific and poor practice. A free catharsis at the beginning of sudden fever often gives a sense of relief, probably by removing ptomaines and other effete matter from the intestines, and in this or some other way removing congestion—or a sense of it—from the head. But except by removing ptomaines there is small proof that it lowers the temperature; and evidence of this latter even is not of the best.

It is, of course, always in order to attempt to remove or destroy the causes of fever. Some of the more tangible ones, especially those of a surgical character, we may deal with effectively. We may evacuate effete matter from the alimentary canal and increase the toxicity of the urine, which it seems clear is one of the eliminating effects of the Brand treatment of typhoid, although many forms of treatment may help the system free itself from the toxic influence.

The service of this sort which we can render is very sharply limited, and may be roughly indicated as follows:

1. Pus-pockets, suppurating surfaces, and cysts leaking into the connective tissue, and so reaching the general circulation, may sometimes be evacuated or removed.

2. Inflammation may be assuaged, cured, or waited for.

3. Ptomaines in the alimentary canal may be evacuated by a cathartic if they do not directly bring on a remedial diarrhea.

4. Malarial plasmodia may be effectively dealt with; and we have, fortunately, one drug proved to have a positive action against these parasites.

5. The causes of the essential fevers, that obviously consist of specific microbes which run their course in the definite periods, are usually destroyed by the conservative havoc wrought by the products of the microbes themselves. No drug is capable of destroying them, and, on the basis of present knowledge, it is idle to medicate by such means. But we are beginning to know that the destruction of these poisons is possible by artificial means acting like the physiological forces. The success already attained in a few diseases, most notably diphtheria, is crucial proof of the possibilities in this direction, and is reason for the faith that we shall soon be able to deal with many diseases in the same way. This is the direction the efforts of every clinician ought to take, and we await the beck of the votaries of bacteriology and pathology.

It is as hard to keep the practicing part of the medical profession plumb as it is the lay world. We easily drop into habits of prescribing for insignificant things, to the neglect of the few indications that make for the patient's better comfort and greater prospect of recovery—the two objects that alone justify the existence of doctors. We give aconite or other drugs for slight fever and to bring down the pulse; digitalis, because the pulse is weak at the wrist, even when the weakness is apparent and not real, but due

to the muscular and nerve fibers of the vessel walls; we give calomel to clean off the tongue; prescribe for dry and rough skin and for cold, clammy skin; and for temporary dark coloration of the urine—and all as though such things were consequential and not the necessary, harmless accompaniments of many sicknesses of all shades of severity. Worse, we often prescribe thus to the injury rather than the benefit of the patient, and by pursuing such methods hide from our own eyes the manner of reasoning that means growth and the measures that, beside being scientific, are genuinely useful for the health and longevity of the sick.

ACUTE TONSILLAR DISEASES AND THEIR SEQUELÆ.

The *Journal of the American Medical Association* of July 21, 1900, has in it an article by ABRAHAM, in which he tells us that at the onset of acute catarrhal tonsillitis we should administer a saline purgative and spray or brush the tonsils and pharynx every hour with a solution of:

℞ Formalin, ♏ xv–xx;
Potassii chloratis, ʒ j;
Liq. ferri chloridi, f ʒ j;
Aquæ menthæ pip., q. s. ad f ʒ iv.
M. Sig.: Use as spray.

Early in the disease cold applied internally in the form of gargles or cracked ice in the mouth, and externally in the form of cold compress or ice-bag, is of invaluable aid. The patient should drink frequently of equal portions of cold milk and Vichy water. For the febrile condition we may administer antipyrin, and in conjunction give a capsule containing:

℞ Quininæ hydrobromat., gr. j;
Sodii benzoatis, gr. ij;
Salol, gr. v.
M. Pone in cap. No. 1. Sig.: One every three hours.

If the inflammation extends to the deeper tissues, the tonsils and surrounding structures become edematous and interfere with deglutition. Multiple punctures and scarifications are then indications in order to produce free bleeding; and at this stage heat applied internally in the form of gargles and hot drinks, and externally in the form of poultices and fomentations, is indicated.

In the remaining forms of tonsillitis, much depends upon the stage of the disease. If we begin treatment within twenty-four hours of the onset, we can frequently abort the attack by administering at once a tablet containing calomel, gr. ¼, and sodium bicarbonate, gr. 1, every thirty minutes for eight doses, followed later by a Seidlitz powder. Remove with a curette the yellowish exudate from the crypts, and apply on a cotton-tipped probe to the surface and into the crypts of the tonsils every two hours the following:

℞ Menthol, ʒ ss;
Guaiacol, ʒ jss;
Glycerin, f ʒ ij;
Alcohol absol., q. s. ad f ʒ j.
M. Sig.: Apply locally.

Cold should be applied immediately. Administer every half-hour a drop of tincture of aconite and watch carefully for the physiological effects of the drug, stopping immediately upon their appearance. Give internally every two hours, in a little milk or water:

℞ Guaiacol carb., gr. j;
Sodii benzoat., gr. ij;
Sodii salicylat., gr. v.
M. Ft. in chart. No. 1. Sig.: In milk or water every two hours.

Pus should be evacuated as early as we can diagnose its presence; tonsillar abscesses should be incised with a sharp-pointed knife and sprayed with the compound formalin solution. A peritonsillar abscess should be opened with a sharp-pointed curved bistoury, so as to expose only the cutting surface, the incision being made where the abscess points or at the most dependent portion. The direction of the incision should be from above downward and slightly outward, parallel with the anterior pillar.

The isolation of all cases of acute lacunar tonsillitis is advisable. In adults and children recurring tonsillitis and inflamed and hypertrophied tonsils are positive indications for a radical procedure. When all acute symptoms have subsided, subsequent attacks should be prevented by a partial or complete removal of all tonsillar tissue. Hypertrophied tonsils with numerous crypts, and spongy surface, that we so often see in children or young adults, should be amputated, either with the tonsillotome or with the galvanocautery wire or knife. If the former instruments are employed, Abraham invariably cauterizes the cut surface in from two to twenty days with a galvanocautery knife, so as to form a dense cicatrix and to eliminate the remaining crypts. Hypertrophied tonsils in adults, with a ragged surface, enlarged crypts, and broad base, should be removed entirely. The adhesive fold of mucous membrane which is frequently attached to the anterior faucial pillar and inner surface of the tonsil should be incised with the right-

angled knife, and the tonsil removed with a gouge. The after-treatment consists in keeping the parts thoroughly cleansed with the compound formalin solution.

The conclusions to be derived from a study of these affections are: (1) All cases of acute tonsillar disease should be considered more than trivial affections; (2) acute lacunar tonsillitis is an infectious disease; (3) isolation should be practiced in all cases of acute lacunar tonsillitis; (4) recurring attacks of acute tonsillitis are an indication for the partial or complete removal of the tonsils; (5) a careful systemic examination and treatment should be applied during and after an attack of acute tonsillitis.

A NOTE ON THE RESULTS OBTAINED BY THE ANTITYPHOID INOCULATIONS.

By the kind permission of Surgeon-General Jameson, M.D., C.B., Dr. WRIGHT is enabled to publish the following officially collected statistics with regard to the results obtained by the antityphoid inoculations in the military garrison during the siege of Ladysmith.

Table I.—Results obtained by the antityphoid inoculations in the case of the officers and men of the military garrison during the siege of Ladysmith:

	Number under observation.	Number of cases of enteric fever.	Proportion in which attacks stand to total number of men in group.	Number of deaths from enteric fever.	Proportion in which deaths stand to total number of men in group.	Proportion in which deaths stand to total number of attacks in group.
Not inoculated	10,529	1489	1 in 70.7	329	1 in 32	1 in 4.52
Inoculated	1,705	35	1 in 48.7	8	1 in 213	1 in 4.4

In addition to the above summary of results, obtained on officers and men combined, the figures relating to officers separately are also given in the official statistics. With regard to these last it may be pointed out that quite apart from the fact that these figures relate to a very small group of persons (forty-four in number), the figures considered as statistics are probably fallacious, owing to the fact that the group of inoculated officers (consisting as it must have done almost exclusively of young men at the most susceptible age) is compared with a group of officers which includes all the older and less susceptible men and the men who have already had typhoid fever. The figures referred to are none the less subjoined with a view to conforming to the arrangement adopted in the official statistics.

Table II.—Results obtained by the antityphoid inoculations in the case of the officers of the military garrison during the siege of Ladysmith:

	Number under observation.	Number of cases of enteric fever.	Proportion in which attacks stand to total number of men in group.	Number of deaths from enteric fever.	Proportion in which deaths stand to total number of men in group.
Not inoculated	171	43	1 in 4	5	1 in 34.2
Inoculated.....	44	9	1 in 5	2	1 in 22

In drawing inferences from the figures in this table it is to be borne in mind that the erroneous inclusion or exclusion of a single case, or difference in the event in the case of any patient included in the category of the inoculated, would sensibly alter the present aspect of the table.

The same circumstance must be borne in mind in connection with any attempt to base a comparison of the case mortality in inoculated and uninoculated upon the figures in Table I. For it will be manifest that in no circumstances can an estimate of case mortality be safely based on a series of only thirty-five cases, and least of all would it be permissible to do this under conditions such as those of Ladysmith during the siege, where many other factors in addition to the severity of the attack must have determined the favorable or unfavorable event of the cases. It would, however, appear probable, in view of the figures given in the table, that the case mortality was not influenced by the inoculation. On this subject further light must be awaited, especially as it would appear from certain statements which have emanated from the seat of war that the disease generally runs a milder course in the inoculated.

The question of case mortality is, however, quite subordinate in interest to the question as to how far the figures presented in Table I enable us to estimate in quantitative terms the reduction in incidence and mortality which can be achieved by the process of antityphoid inoculation.

To answer this question it will be necessary to inquire, on the one hand, whether there were any circumstances other than inoculation which may have tended, either to diminish the incidence of typhoid fever among the inoculated in Ladysmith, or unduly to

swell the roll of typhoid fever among the inoculated.

In connection with the former question the only point which comes up for consideration is the question as to whether the inoculated were more favorably circumstanced in the matter of sanitation of their camps than the uninoculated. No detailed data for the determination of this question are at present available. But this will be seen to be unimportant, in view, first, of the fact that there was in each regiment and corps an uninoculated majority who must equally with the inoculated have benefited or suffered from the sanitary or insanitary condition of the various camps; and secondly, of the fact that the inoculated who were attacked were drawn from twelve different corps and regiments. It may therefore be assumed that the inoculated and uninoculated were equally exposed to the risk of infection.

The question as to whether there were any circumstances which tended unduly to swell the roll of typhoid fever among the inoculated is one which requires to be treated at somewhat greater length. The following points must be kept in view: (1) So far as is known the men who are set down as inoculated were with hardly an exception only once inoculated. It seems probable from the fact that only two cases among twice inoculated persons have as yet come to Wright's knowledge that second inoculation confers a considerable additional protection. (2) It is possible that certain of the officers who are set down as inoculated may have been inoculated with antityphoid serum and not with a vaccine consisting of a sterilized typhoid culture. Two or three instances have been reported to Wright where this error was committed in the case of officers proceeding to South Africa. In the statistics now in question the date and place of inoculation are in the case of five out of the nine officers attacked set down as unknown. (3) It is possible in the case of the men as distinguished from the officers that revaccination against smallpox, which, like antienteric inoculation, was in many cases carried out on board the transports, may in certain instances have been confused with the latter inoculation. Instances of this confusion have already several times come to Wright's knowledge. (4) Lastly, it is possible that owing to the exigencies of military service, or owing to other reasons, the full prescribed dose of typhoid vaccine may not in all cases have been injected. Instances of the employment of vaccine in fourfold reduced doses have come to his knowledge. It is inconceivable, but there is nothing to either support or rebut the suggestion, that some reduction of the dose may have been found necessary in the case of the Liverpool Regiment, which was inoculated (presumably, as in the case of other regiments, only very partially inoculated) at Ladysmith on the eve of the outbreak of hostilities. At any rate, it is noticeable that this regiment furnished thirteen cases of enteric fever among the inoculated men, whereas the whole rest of the garrison of Ladysmith furnished only an equal number of such cases.

In view of the above points, regarding which there is not at present any information available, it is at present impossible to determine precisely to what extent the inoculated were protected by inoculation. But the results set forth in Table I would appear to be distinctly encouraging, inasmuch as they show that the proportion, on the one hand of attacks, and on the other hand of deaths, from typhoid fever was seven times smaller in the inoculated than in the uninoculated. And it may be borne in mind that if the number (no doubt a considerable one) of men who had previously suffered from typhoid fever had been subtracted from the number of the uninoculated, as might quite legitimately have been done, the statistics would have borne an even more favorable aspect.

THE COMMONER NEUROSES OF CHILDHOOD: THEIR PATHOLOGY AND TREATMENT.

The Lancet of July 14, 1900, has in it an article by KAUFFMANN in which he speaks of the causation of these neuroses, and then proceeds to their treatment. As he well points out, in view of so many common points in the production of these neuroses their treatment must possess certain common features which shall first be dealt with.

From the stress which has been laid upon disorders of digestion and faulty diet as a cause of nearly all these diseases, it follows that correction of dietary errors is one of the main points requiring attention. In the majority of cases in which the feeding is at fault, it is advisable to cut down the amount of meat which the child consumes. Meat once a day will nearly always be sufficient, and that once should be at dinner-time, in the middle of the day, while there are still some hours of muscular activity be-

fore the child. It is seldom necessary or advisable to remove meat altogether from the dietary, for it is nearly always an excessive quantity of meat which leads to the trouble, not meat in a small or moderate amount. So long as the meat is good there is, Dr. Kauffmann believes, not much difference between beef, mutton, rabbit, fowl, game, etc., but fish may with advantage be substituted for butcher's meat. Light puddings and green vegetables may be given, and potatoes in moderation. In fact, it is not so much a question of prohibiting any article of diet as of regulating the amount. In many children the entire bulk of food requires reducing. In severe cases of enuresis it is sometimes advisable to stop meat altogether for a period, and then to allow it again in very small quantity.

Sufficient mastication and moderate rest after meals should be insisted on, as they greatly help digestion, and the child should not leave the house after breakfast until the bowels have been opened. It is plain, also, that in most cases the bowels demand attention, since the prevention of an autointoxication from the intestine depends first on regular and sufficient defecation. As cathartics the saline purgatives are invaluable, at all events to begin the treatment with, and since it is advisable not to give drugs more often than necessary. They are best administered in the shape of a single dose of mixed sulphates of sodium and magnesium one hour before breakfast, or in a smaller dose the last thing at night. Any of the natural aperient waters may be substituted for this mixture. Calomel (or calomel combined with a small quantity of colocynth and rhubarb) is also extremely valuable in this class of cases. Senna, aloes, and other drugs which act mainly on the lower intestine, are less indicated, for it appears that the groups of aperients first named act largely by stimulating the flow of bile and by thus helping the liver to eliminate whatever toxic materials it has removed from the portal blood-stream. Whichever drug be given the object to be attained is one large stool, of porridge-like consistency, to be passed preferably before or shortly after breakfast. Again, we want to convert habitual irregularity of the bowels into habitual regularity, and to this end it is necessary to give, not an occasional purge when the bowels have been obstinate for a day or two, but a regular course of this daily treatment, extending over three or four weeks, to be followed by a gradual diminution of the dose, administered first on alternate days, then at longer intervals. This combined with the dietary measures prescribed will usually be followed by complete success in children, and any excess of indican, if present at the onset, usually disappears under these therapeutic measures, but sometimes it continues to be present in considerable quantity, showing that in spite of the purgation an excess of microbial products is absorbed. In such cases the so-called intestinal antiseptics naturally suggest themselves, the chief of which are sulphocarbolate of sodium, salol, phenol, mercurial salts, charcoal, and possibly arsenic, and though each has proved useful, Kauffmann cannot say that any one of them can be relied upon to remove the trouble entirely and in all cases. Those which have in his hands proved the most successful are sulphocarbolate of sodium and charcoal. The first is, however, very apt to give rise to headache and must therefore be carefully watched, and on the whole he gives the preference to vegetable charcoal given in thirty-grain doses twice daily. Perchloride of mercury, the most powerful of antiseptics, has not in his experience had the desired effect—at least, in such doses as he has cared to give to children. Arsenic in comparatively large doses he has not yet tested in this connection.

Tonics may be of use in certain of these neurotic conditions where there is enfeebled general health due to previous disease, but their utility is far less than that of the remedies which act upon the intestines. They do, however, improve the appetite and probably hasten the general metabolism, and they may therefore be useful combined with the intestinal drugs. Their employment alone, however, is to be deprecated where there is any active autointoxication, for in such cases they do not strike at the root of the trouble, and only delay improvement by deferring the employment of the proper remedies.

In conjunction with the measures which have been mentioned above to be applied in all those cases in which self-intoxication is the main cause, each one of the neuroses requires some special treatment.

Chorea.—Besides seclusion, darkness, and quiet, undoubtedly the most effective treatment is that by arsenic in doses of about fifteen minims of Fowler's solution twice or three times daily, as advised by Dr. Murray. The success of this method is quite another thing than that attained with arsenic in small

doses, and is much more quickly gained. Some evidences of poisoning are apt to arise under this medication, notably nausea and vomiting, and when these occur the best thing is to diminish the dose, not to stop the drug.

Enuresis Nocturna.—This may be successfully treated, as a rule, by giving bromide of potassium with either tincture of belladonna or of hyoscyamus, as a nightly dose. It is, moreover, well to administer some alkali, such as nitrate of potash, in order to diminish the acidity of the urine, which excessive acid reaction is itself of irritating effect. Of course, should bacteriuria be present it is necessary to locate the cause of the same and to deal with it.

Migraine.—Attacks of migraine which depend upon autointoxication may, Kauffmann believes, be successfully cut short by the administration of a smart emetic, and he has known several adults who have asserted that this course more certainly relieved the attack than any other. Of course, antipyrin sometimes succeeds in these cases, but by no means always. It is not clear how emetics produce their effect, but it may be that some of the toxic material is excreted from the blood by the gastric mucous membrane and reabsorbed, in which case an emetic will remove it. On the other hand, it is possible that the act of vomiting stops the headache by the violent stimulus which it affords to the nervous system. He does not think that emetics are ever useful in those migrainous attacks which result from prolonged overwork of the body or mind.

Tetany.—For the spasm the bromides, so far as his experience goes, are by far the most efficient remedies when employed together with the proper treatment for the catarrh of the respiratory or intestinal tracts. Galvanization is recommended, but Kauffmann has never had occasion to employ this measure, and he cannot help thinking that in most cases it is unnecessary. Quiet and darkness are strong aids to the successful treatment of this affection.

Dreaming and Nightmare.—For these symptoms no treatment is required beyond that which deals with the primary cause.

Epilepsy.—Undoubtedly the best drugs to employ in epilepsy are the bromides. Kauffmann is accustomed to give equal quantities of the potassium and ammonium bromide, the total dose to be determined by the result upon the seizures. This combination tends, he thinks, to resist the depression which is apt to ensue when the potassium bromide alone is used for long, and these drugs must be administered for a long time if any permanent good is to be done. They probably act directly upon the cerebral centers. As he had occasion to point out before, epileptic seizures are very apt to continue even when the predisposing cause has apparently been removed, and their continuance is no doubt due to the fact that a morbid habit of action is acquired by the nerve structures concerned in the convulsive discharge, a habit which is favored by every seizure. Taken in hand early and treated with perseverance, epilepsy is by no means so hopeless a malady in children as one might be led to believe by seeing it in the adult chronic epileptic. Should intestinal worms appear as the cause of this disease, and the proper anthelmintic remedies be administered with apparent success, one must nevertheless bear in mind the obstinacy of these parasites and the fact that they are generally present in numbers. A child can certainly not be regarded as being free from the intruders until the stool has been repeatedly found clear of the ova, and in the case of tapeworms the head must be found. For oxyuris vermicularis he is in the habit of prescribing infusion of quassia internally, coupled with mild purgatives. For tænia male-fern is the most successful drug, provided that it be given when the intestines are empty through fasting, and that it be helped by a cathartic remedy; but whichever parasite it may be, the altered condition of the intestinal mucous membrane will have to be remembered, and this condition will require careful dieting, and possibly saline purgatives, to be continued over a considerable period of time.

SUCCESSFUL OPERATION IN TYPHOID FEVER WITH PERFORATION.

MOYER (*Pennsylvania Medical Journal*, No. 3, 1900) operated on a patient the twenty-first day of his disease, when a painful expression was noted in the man's face. The abdomen was found to be very tympanitic and tender; the liver dulness was greatly lessened; the respirations were 32, the pulse 108, the temperature 100.6° F. Cocaine anesthesia was used. A brownish-yellow fluid was present in the peritoneal cavity, and a perforation the size of a pin's head was found in the small intestine and closed. The peritoneal cavity was thoroughly flushed with sterile water and was drained by a rubber

tube. Six days later he suffered from severe cough. On the seventh day he had an evening temperature of 97°, and was perfectly comfortable except from his bed-sores. On the eighth day after operation his temperature, pulse, and respiration were normal.

CANCER OF THE BREAST.

DAHLGREN (*Quarterly Medical Journal*, vol. viii, Part IV) reports the clinical material in Lennander's service. The supraclavicular fossa is only opened when the glands are felt to be enlarged. Out of seventy-four operations, sixty have been done more than three years, and one died from the operation. Out of the remaining fifty-nine, twenty-six are well and living; twenty-four have died from external recurrences; nine are dead from accidental or unknown causes, or from internal recurrences. Recurrence may take place at a very late date—four, five, or even seven years after operation. The results of the last three years have not been so good, though the cases (fourteen) are few.

THE BLOODLESS TREATMENT OF CONGENITAL DISLOCATIONS OF THE HIP-JOINT.

LORENZ (*Medical Press and Circular*, No. 3197, 1900) states that up to the present time the anatomical result of the bloodless treatment of congenital dislocations of the hip-joint has been good in about one-half of all cases. In the other half the result has been indifferent. But even in those cases where the anatomical result has miscarried the functional results, as regards endurance and symmetry in locomotion, have been excellent and very much better than the result of bloody reduction. The pathological lordosis of the double dislocation disappears entirely.

Among the bloodless methods the treatment by means of portable apparatus can be said to be without limit; also as a rule without result. The gradual reduction of the head of the femur by means of bed extension is successful in very young children.

The bloodless reduction, under narcosis, overcomes all of these difficulties. Under the proper age limits it is entirely without danger. These limits are, for unilateral dislocations, the ninth and tenth year; for double dislocations, the seventh and eighth year. Ankyloses and contractures need not be feared. The bloodless reduction is performed either over the upper rim of the acetabulum, by means of horizontal extension, or over the posterior rim by means of vertical extension. This latter procedure is preferable, since the stronger development of the posterior rim allows the success of the reduction to be more readily recognized. The typical reduction over the posterior rim is performed (without instruments) in the following manner:

First, the tense adductor muscles are torn (subcutaneously) in forced abduction by means of pressure and stretching.

Secondly, the thigh, having been flexed to a right angle, is stretched vertically with the hands and abducted 90 degrees, pressure being made at the same time on the trochanter. The success of the reduction is manifested by positive physical and clinical signs, and can be verified by means of the radiograph. The principle of the after-treatment consists in centering the weight of the body upon the base of the acetabulum, the base of the acetabulum resting upon the reduced head of the femur. From functional irritation the acetabulum becomes wider, and is deepened especially by the building out of its upper rim.

To keep the head of the femur within the acetabulum (retention) the thigh is (thirdly) fixed in extreme abduction and slight overextension for a period of four to five months. The extreme position is then replaced by a medium position of the joint (slight flexion and lessened abduction), and the thigh is again rendered immobile for four to five months. During this period of immobilization, the patients must be up and about as much as possible.

The final treatment is carried out by means of massage and gymnastics, especially of the pelvitrochanteric muscles, without the application of any mechanical supports. The examination with the radiograph shows that, in many cases, a complete anatomical restoration of the hip-joint and an ideal cure of the dislocation has been attained, inasmuch as the acetabulum has been concentrically widened and deepened, under the pressure of the body weight. In another series of cases the acetabulum has been excentrically widened toward its upper extremity by the formation of a new bony upper rim. In still other cases the head of the femur cannot be retained within the pan. The latter remains unchanged, an anterior superior dislocation resulting; so that the anterior crest of the ilium engages the head of the femur.

MYOMA OF THE BLADDER.

RAMSAY (*Philadelphia Medical Journal*, July 7 and 14, 1900) reports one case which died subsequent to the operation, from unknown causes. These tumors appear to take origin from the unstriped muscle tissue of the bladder wall, and in their histologic structure are almost exactly similar to the common myomas of the uterus. Their mode of origin is still a question of conjecture, and there must certainly be some special influence determining their development, as is indicated by their extreme rarity. The situation of the myoma in the bladder and the direction of growth vary, and so there are three distinct varieties: (1) the tumor may project into a cavity of the bladder as a sessile or pedunculate mass; (2) it may project from the outer surface of the bladder into the peritoneal cavity and be covered by peritoneum; (3) there may be a diffuse infiltration of a greater or less portion of the bladder wall by the myomatous tissues, though probably this form is always a myosarcoma and not a pure myoma. The portion of the bladder most frequently the seat of the growth is the trigonum. Histologically these tumors are made up chiefly of unstriped muscle tissue, lying in interlacing bands and held together by a variable amount of connective tissue, in which are found a number of small blood-vessels; they are usually rounded in shape, and may perhaps be lobular. The pedicle varies in size and the muscle fibers composing it can generally be traced directly into the muscular fibers of the vesical wall proper.

These tumors are occasionally found multiple, several tumors appearing grouped near together or placed separately in various parts of the bladder. The tumors vary greatly in size, from a small tumor the size of a hickory-nut to enormous masses weighing several thousand grammes. In one reported case the tumor weighed 3200 grammes. This affection is distinctly a disease of adult life, the youngest patient being a boy of twelve, and the oldest was aged seventy-four. It affects both sexes in about an equal proportion. As a rule the growth is slow. The symptoms depend on the seat of the tumor, whether submucous and projecting into the vesical cavity, or subserous and projecting into the peritoneal cavity. In the last named variety the symptoms are apt to be somewhat vague and misleading and not referred at all to the bladder. In one such case the patient suffered chiefly from attacks of pain in the rectum, a constant sense of pressure in this region, and at one time rectal tenesmus. The only bladder symptom was occasional frequency of micturition. The symptoms of the submucous variety are usually definite, and among those noted are frequent or painful micturition, hematuria, pain and vesical spasm, a sense of weight in the perineum or bladder. The tumor can usually be palpated by bimanual palpation through the vagina in the female and through the rectum in the male. The dimensions, as well as the seat and size of the base, can also be outlined with a bladder sound, and valuable indications for treatment are obtained by the use of this instrument.

The complications likely to occur with these growths may be easily imagined. Cystitis is almost certain to appear some time during the course of the trouble, and following this ulceration or a pericystic infection. Ascending inflammation of the ureters, with pyelitis and pyelonephritis, is also a common complication. Two cases have been described in which a beginning carcinoma of the ulcerated mucous membrane covering the tumor was found. Hyaline degeneration, necrosis of the tumor, or calcification, is almost always found.

Practically the only new growth which will give rise to the vesical symptoms associated with a pedunculate tumor is a sarcoma, and the duration of the symptoms in the myomas covers a period so much longer, and the course of the disease is so much slower, that this should serve to establish the diagnosis, though it can only be verified by microscopical examination of a piece of the tissue.

If the tumor be smaller and not easily palpable, the diagnosis is a much more difficult one, and a differential diagnosis from all varieties of vesical tumors must be made. In such cases the cystoscope is of the greatest value, as with it all of the papillomatous growths may be eliminated as well as carcinomatous or other ulcers, though in these cases also a microscopical examination is the only sure means of verifying the diagnosis.

The treatment is entirely surgical, and consists in the removal of the growth, preferably by the suprapubic route. Drainage is usually necessary in these cases on account of the coincident cystitis. In the female it will be found most convenient to drain through the vagina by an artificial vesico-vaginal fistula, though the suprapubic drainage in the slighter infections may be sufficient. In the male the drainage through

the suprapubic incision will usually suffice. In very bad infections of the bladder it will be found useful to leave the suprapubic wound open, and keep the patient in a continual hot bath, obtaining in this way the most perfect possible drainage. In the milder cases frequent vesical irrigations, using mild antiseptic or astringent solutions, will suffice.

The results after operation for the removal of vesical myomas have been unfortunately not as good as we might expect after operation for a benign growth of this character, and this bad result may be partially explained by the severe coincident infection of bladder or kidney, or a general septic condition. This follows evidently from the late recognition of the growth, and the development of cystitis, but at the present time there seems to be no way to avoid this late recognition, as no trouble is suspected until the onset of the cystitis calls for an examination and recognition of the tumor.

APPENDICULAR FISTULA.

DEAVER (*Journal of the American Medical Association*, July 14, 1900) states that there are two types of fistulæ, the external and the internal. The external is subdivided into two, the simple and the fecal. The simple fistula is also of two kinds: the first is where the external channel leads from an unhealed abscess cavity, and corresponds to the site of the drainage tract; a second is where the lumen of the appendix is in direct communication with, and discharges its contents into, the fistula. There are two varieties of the fecal fistula consequent on appendicitis: (1) Those in which the lumen of the approximal portion of the appendix is in direct communication with the fistula, and from which there is a fecal discharge which will subsequently become entirely mucous or but slightly stained with fecal matter. (2) Those in which the cæcum, the ascending colon, the small intestines, or both large and small intestines, are in communication with the fistula; the opening in the bowel may be so extensive that it may practically amount to an artificial anus.

The factors in the production of appendicitis are likewise the cause of fistula. The invasion and the destructive action of microorganisms are in a large measure responsible for this condition of affairs. The persistence of a fecal fistula may be caused by the continued use of a drainage-tube, as has happened in several cases. A fistula may not make its appearance until some days after the operation, often appearing at a very remote period. The character of the discharge in the external variety of fistula varies according to the type of the fistula and the stage at which it is seen. If seen early the discharge is fecal in character, except in the type where it proceeds from a separated appendix which is not in communication with the bowel. The constitutional effect of a fecal fistula is evidenced by a more or less rapid loss of strength and impairment of nutrition. The treatment of the external variety varies with the individual cases. It is well to permit nature to attempt a cure. The diet should be regulated and perfect cleanliness maintained. Frequently a fistulous tract will heal spontaneously if the diet be solid food and the bowel contents be kept rather hard. If the fistula persists after the lapse of a reasonable amount of time operation offers the only hope of cure. The operative treatment of the simple fistula should consist in exploring the tract to ascertain whether an infected suture be the cause. If it is, this should be removed and the tract curetted and packed with gauze. This usually suffices to insure a cure. When the fistula or sinus communicates with an unhealed abscess cavity, the mouth of the fistula should be enlarged sufficiently to permit of thorough cleansing and packing. When possible without opening the peritoneal cavity, the mouth of the fistula should be enlarged to a degree to equal the transverse diameter of the abscess cavity at its widest part. This should be followed by thorough cleanliness, packing, etc.

The treatment of fecal fistula necessitates opening the peritoneal cavity, removing the appendix — or its remaining portion, as the case may be — and thoroughly breaking up all peritoneal adhesions. When the fistula is in communication with one or more openings in the intestine, closure, preferably by suture, is to be recommended, but resection, end-to-end union, etc., are frequently required.

It may be said in conclusion: (1) The fistula is one of the most important sequels of operation for appendicitis; (2) certain cases of fistula tend to close spontaneously; (3) when the fistula causes marked constitutional effects, delay in operating is a menace to life; (4) it is possible to avoid fistulæ in the great majority of instances if operation is instituted early; (5) operative cases of

fistula are usually curable, rarely requiring a repetition of the operation for correction; (6) the fistula does not necessarily occur directly after the operation for the removal of the appendix or the evacuation of an appendiceal abscess.

SUPPURATIVE PERITONITIS; SPONTANEOUS EVACUATION.

WALLACE (*Lancet*, July 7, 1900) reports the case of a girl aged four who presented the typical clinical symptoms of suppurative peritonitis of a subacute type, probably tuberculous in origin. The abdomen was prepared for operation in the usual manner; but on removing the protective sterile dressing some hours later, just previous to the operation, it was found to be adherent near the umbilicus. In the effort to remove it the tissue beneath peeled off and instantly a stream of pus flowed out. On measuring it, it was found that no less than twenty-four ounces had escaped. It was healthy in color and devoid of shreds and flocculi. The peritoneal cavity was emptied by gentle pressure, and then the opening was dusted with iodoform and an aseptic dressing applied. The child made an uninterrupted recovery, and since has gained weight and seems to be in perfect health.

RADICAL CURE OF AN INGUINAL HERNIA IN AN OLD WOMAN.

CORBIN (*Montreal Medical Journal*, vol. xxix, No. 7) reports the case of an inguinal hernia in a woman ninety-eight years of age cured by radical operation. This patient presented herself at Corbin's office because of the pain her hernia gave her. It was about the size of a goose egg. The patient made an uninterrupted recovery.

THE EXTIRPATION OF LUPUS.

MORELLE (*La Presse Médicale Belge*, 52 An., No. 30) considers total extirpation as the treatment of first choice in dealing with lupus. With this opinion Asselbergs does not agree, holding that such a radical procedure is only practicable when the lupus is limited, or at least is confined to such dimensions that the resulting wound can be closed either by sutures or by transplantation of flaps. Under such circumstances there can be no question but that extirpation is the most reliable method of cure. In some cases, involving areas too great to be thus treated, curettage, associated with thermo- and galvano-cauterization, will be followed by a cure after one treatment; and, moreover, a cicatrix resulting from this latter method is more sightly than that following Thiersch's transplantation — an important matter when lesions are located upon the face.

Lang operated by total excision on fifty-two cases of lupus. Thirty-five of these he kept under observation, and noted that in ten there was a recurrence at the seat of operation. In four cases there was a metastasis to other regions of the body.

It should be recognized that lupus is not essentially a local tuberculosis. In certain cases it is undoubtedly due to external inoculation. It is often, however, a local expression of a general bacillary infection. In a large percentage of lupus cases there is a distinct tubercular family history. The local treatment should always be seconded by a proper general treatment. Asselbergs's conclusions in regard to the question of excision are as follows:

Extirpation is the treatment of choice in cases of limited lupus. It may be absolutely impracticable because of the extent and multiplicity of the diseased surface. It is an admirable method of treatment in the very extensive lupus of the extremities. Extirpation does not guarantee against a recurrence. When the lupus is due to an external inoculation and is not removed by prompt treatment, a secondary general infection is likely to develop.

THE TREATMENT OF INFECTED WOUNDS.

LE JARS (*La Semaine Médicale*, No. 32, 1900) holds on the basis of bacteriological examination that all wounds accidentally inflicted are infected. As proof he cites Riggenbach, who examined twenty-four wounds as they came into the hospital. Of these but one was germ-free; fifteen of the remainder contained the white staphylococcus, eleven streptococcus, four micrococcus tetragonus, and two tetanus bacillus.

Brunner, of forty-one cases which he observed, notes that only one failed to yield cultures. It would, therefore, seem apparent that when the surgeon is called upon to treat a wound its thorough disinfection should be the first aim in view. In this relation, the question as to how long a wound may remain

infected before it can be efficiently cleansed is important.

It will be remembered that Schimmelbusch inoculated the end of the tail of a mouse with cultures of anthrax, and ten minutes later amputated the tail at its root. None the less, the animal perished of the disease; while Reichel holds that one minute after inoculation a thorough antiseptic treatment is powerless to prevent infection.

But the logical conclusion of such experiments would seem to demonstrate that an attempt at disinfection under ordinary circumstances is perfectly hopeless, since minutes at the least, and often hours, elapse before accidental wounds receive their first cleansing and dressing. These and other experiments have shown that the main dependence must be grounded not on the power of chemical antiseptics used, but on placing the wounded parts in the best possible condition for resisting, by their vital action, microbian infection.

Powerful antiseptics distinctly devitalize the tissues, and whilst they may destroy the surface germs, can rarely render wounds absolutely sterile; hence they produce conditions favorable for the subsequent development of such germs as are not destroyed. The aim of the surgeon in treating recent wounds should be to accomplish thorough cleanliness. He should take every means of avoiding a secondary infection—that is, he should adopt all precautions customary in preparing for an operation. He should remove all foreign bodies and cleanse the raw surfaces. A stream of normal saline solution should be employed in washing foreign particles and clots away, with tampons of sterile gauze, and provided the wound is an incised one and not bleeding, it should be closed by sutures. If it is contused and lacerated, the obviously dead or greatly devitalized parts should be cut away. The same mechanical washing should be practiced with the utmost care and thoroughness, and the wound should be abundantly drained by damp gauze packing. In gunshot wounds, the less done the better for the patient. Thorough cleansing, occasional drainage, aseptical occlusion of the wounds of entrance and exit, are the means best sulted to prevent complications. When so much time has passed after the infliction of the wound that infection is demonstrated, either by local or by general reaction, or by both, the therapeutic indication lies again in thorough mechanical cleansing and provision for continuous drainage rather than in the use of powerful antiseptics. Sterile damp gauze is the most effective way of draining. The external dressing must not be covered with any impermeable material, since thus evaporation is prevented.

Preobrajensky has shown that if a dressing properly fulfils its function of absorption and evaporation there will be no penetration of toxic substances into the organism. Thus, strychnine if spread in toxic quantities upon the surface of an experimental wound will not cause any symptoms if it is covered in by a damp dressing from which evaporation is allowed to take place. If this damp dressing is covered by oiled silk the animal perishes. The same effect is produced when a wound contains putrid blood or pyogenic microbes. In certain deep wounds placed in comparatively inaccessible regions upon the mucous membrane, as for example wounds of the mouth, the vagina, and the rectum, certain antiseptics sometimes valuably supplement the use of copious irrigations with normal salt solution. The best is a solution of hydrogen peroxide.

It will thus be seen that Le Jars practically rejects all antiseptics in the treatment of recent or suppurating wounds, holding that the bactericidal effect of such antiseptics does not compensate for the loss of local vitality incident to their use. He believes in thorough cleansing, proper drainage, and a trust in the natural vitality of the tissues.

THE TREATMENT OF OLD-STANDING PLEURITIC EFFUSION.

MARTIN (*Medical Press and Circular*, No. 3196, 1900) treated an old-standing pleuritic effusion by a blister 6x8 inches applied for five hours to the area of dulness, and by giving the following mixture, one ounce of which was taken three times a day:

℞ Potass. iodid., ʒ j;
Succus conii, ʒ j;
V. cinchonæ, ʒ ss;
V. scillæ, ʒ ij;
Verat viridis, ʒ j;
Sp. am. aromat., ʒ ij;
Syrupi, ʒ j;
Aquæ, ad ʒ viij.

After the blistered surface was healed the dulness was found to be much less marked, and there was slight return of the respiratory murmur. The treatment was steadily persisted with for two months, when fair resonance existed over the whole area of dulness, and the respiratory sounds were well established. The pulse had fallen to 80, and was

greatly improved in character. The general health was vastly improved. There was no cough or pain. The veratrum viride was then omitted from the mixture, and the latter, with this omission, was continued for some time longer. The patient made a good recovery. The time for which the blister was applied is to be noted. It is rarely necessary to leave it on longer than four hours, and even that time may be shortened by one-half to one hour. All that is necessary is to secure its stimulating effect upon the cuticular nerves, and the blister formed should consist only of the most superficial cuticular layer. The contained fluid should be evacuated by a very small opening, and the layer of skin left as a protection to the raw surface beneath. The use of the blister is not now nearly so frequent as it used to be. For pain in the region of the heart, so frequently met with in rheumatic subjects, and in those cases it is so often the premonition of pericardial mischief, the author states that nothing so certainly gives relief as light blistering.

PANCREATIC SURGERY.

There appears in the *Medical Press and Circular*, No. 3196, an abstract of a report by ROBSON upon this subject. He has seen over fifty cases of cancer, which he has found usually to occur after forty years of age, and he believes that the oases occurring earlier in life are in many instances chronic interstitial pancreatitis, which may resemble cancer not only in the symptoms, but in the naked-eye appearance after death. After describing the symptoms, he remarks on the importance of distinguishing between cancer of the head and that of the body and tail of the pancreas. He then discusses the diagnosis, and advises that especially in young subjects, but also at times in older patients, a hopeless prognosis should not be hastily given before surgical treatment has been tried, because if the case turns out to be chronic interstitial pancreatitis, a cure may result from treatment.

In describing the treatment the author thinks that excision of the pancreas for cancer can seldom be feasible or justifiable except in those cases where the disease is limited to the body or tail of the organ, and then only when it is caught in an early stage. Of the fifteen cases on which he has operated for the relief of symptoms by cholecystotomy or cholecystenterostomy, nine recovered and lived for some time in greater comfort. The important fact remains, however, that some of the cases operated upon, and thought at the time to be cancer of the head of the pancreas, recovered, and are now in perfect health, showing the tumors to have been chronic interstitial pancreatitis and not cancer. This leads the author to advocate operation in all cases not too far advanced, especially in young or middle-aged patients, not because much good will be done if the case be truly cancer, but under the hope that the tumor may be inflammatory and not malignant.

The author has operated on five cases of pancreatic cyst, for which, as a routine treatment, he advocates incision and drainage, which he has performed in four cases, with three recoveries.

The treatment of acute infective and frequently that of suppurative pancreatitis practically resolves itself into that of peritonitis commencing in the superior abdominal region, and the author lays stress on the getting rid of inflammatory products by lumbar drainage if practicable, although it may be necessary to make the diagnosis by an anterior incision. In the acute form he draws a comparison between gangrenous appendicitis and acute infective pancreatitis, and considers surgical treatment just as necessary in one as the other as soon as a probable diagnosis can be arrived at.

If there be a great distention in the epigastrium, it will be easier and safer to make the exploratory incision in the left costo-vertebral angle.

Treatment other than operative in order to get rid of distention, relieve pain, fever, and other symptoms, until a definite diagnosis can be made, is also considered.

The author lays great stress upon the importance of chronic interstitial pancreatitis, which he believes is often mistaken for cancer of the head of the pancreas, and which he believes has not received much attention either from clinical observers or from pathologists. His experience in this class of cases has resulted from his having operated on a considerable number of cases of jaundice depending upon obstruction in the common duct, and the absence of relief by medical treatment having rendered surgical treatment necessary. He argues that its recognition is of vital importance, since it is a disease not only capable of relief but of absolute cure by surgical treatment. The author illustrates his assertion by a brief report of fifteen cases on which he has

operated, with recovery in fourteen. In the fatal case, operated on when the patient was almost too ill for recovery, an autopsy showed a simple cirrhosis of the head of the pancreas.

In another case in which relief was given by cholecystenterostomy, but in which there was a recurrence of the trouble owing to closure of the opening, followed by death three months afterwards, an autopsy showed chronic interstitial pancreatitis and not cancer, as the course of events had led those observing the patient to suppose would be found.

The author believes that chronic interstitial pancreatitis with inflammation in the pancreatic ducts is a regular accompaniment of gall-stones in the common duct, and that it frequently continues after the original cause has passed. This observation has been confirmed by Dr. Ferguson, of Edinburgh, who says that his almost universal experience in cases where death has resulted from infective or suppurative cholangioitis is that beads of pus can be expressed from Wirsung's duct. The cases related illustrate the symptoms and the treatment by cholecystotomy, which at once removes tension and allows the pancreatic duct to empty the organ of its infective products. Doubtless at times the manipulation of the head of the pancreas, which occurs during the operation, may detach calculi and inspissated mucus or pus from the pancreatic duct.

The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis should lead the surgeon to hesitate in declining operation in any case of distended gall-bladder with jaundice where the patient is able to bear it, as although little good will be done if the disease be malignant, should the disease prove to be inflammatory a real and permanent cure may be brought about.

After some remarks on hemorrhagic pancreatitis, which in the author's experience of three cases had always been traumatic and associated with effusion into the lesser peritoneal sac, he discusses the subject of pancreatic calculi, which, from paucity of specimens in the museums, from the very few examples found (post mortem), and from the few recorded cases, the author believes must be a rare disease, and usually only recognized by the pancreatitis, and the obstruction to the common duct with infective cholangioitis to which the calculi give rise. For their removal he recommends exploration of the duct through an opening in the second part of the duodenum, of which operation he gives examples.

In conclusion the author looks forward to the time when pancreatic diseases will be awarded the place they deserve in the diagnostic efforts of the physician, and when the surgeon will be called on much more frequently to treat them at a stage when operation, whether exploratory or curative, may be undertaken with every hope of temporary success or permanent cure.

THE RELATION OF SEMINAL VESICULITIS TO IMPOTENCE.

GUITERAS (*New York Medical Journal*, vol. lxxii, No. 6) states that the method of treating impotence due to seminal vesiculitis may be outlined as follows: Internal remedies to neutralize the urine in cases of overacidity; rectal irrigation every night, with normal salt solution or strained flaxseed tea at a temperature of 105° to 120° F., by means of the double-current rectogenital tube; and massage of the internal genitals every five days, followed immediately by a urethral irrigation whenever there is chronic prostatitis or posterior urethritis associated with this condition.

The patient will at first scarcely be able to tolerate the gentlest manipulation of the vesicle by the finger, but after several séances not only will he be able to endure the massage, but he will feel much benefited and relieved by it.

After the symptoms of inflammation and irritation have been relieved, tonics, such as strychnine and iron, can be used, or even damiana and phosphorus. Electricity may also be employed by means of the rectal electrode, using the galvanic or the faradic current, or, better still, the galvanic followed by the faradic.

In conclusion, Guiteras states that while admitting other predisposing causes of atonic impotence, such as chronic inflammation of the posterior urethra, chronic prostatitis, varicocele, etc., he thinks that in the majority of cases seminal vesiculitis is by far the most marked pathological condition present.

HEMATURIA DUE TO BRIGHT'S DISEASE: ITS SURGICAL TREATMENT.

HOFBAUER (*Centralblatt für Innere Medicin*, No. 30, 1900) cites the case of a thirteen-year-old girl who had suffered for two years from a painless hematuria, which be-

came progressively more severe. Barring the necessarily associated anemia the girl suffered no inconvenience; nor, with the exception of the blood, were any abnormal elements found in the urine. The cystoscopic examination showed that the blood came from the left ureter. The corresponding kidney was extirpated, and upon macroscopic examination seemed to be absolutely healthy, though the capsule was somewhat adherent. Upon microscopic examination, however, the kidney was found affected with chronic nephritis.

Naunyn also reports a case of bleeding from an apparently sound kidney, cured by the wearing of a belt. He notes that bleeding commonly ceases even after exploratory operations, and in cases of nephritis the albumin diminishes.

According to Israel nephrotomy is destined to play an important part in the treatment of Bright's disease. This latter surgeon removed a right kidney because of tuberculosis. Eight months later the patient suffered from total anuria, incident to hyperacute nephritis. Israel split the kidney, which was involved in an ascending pyonephritis, and found that it was riddled with abscesses. The results were most satisfactory. He further operated in fourteen other cases of nephritis characterized by unilateral paroxysmal and violent pains, which suggested either kidney stone or tuberculosis.

Symptoms confined to one side often indicate that the disease is thus located, but this is not always true.

Israel holds that there is a unilateral nephritis; that nephritis may cause kidney colic which absolutely resembles the colic due to calculus; that a bilateral nephritis may cause unilateral colic; that a severe nephritis may fail to show either albumin or cylinders in the urine; that the albumin may be absent from urine which contains large numbers of hyaline, granular, and epithelial casts; that nephritis may cause irregular profuse bleeding; that this bleeding is not necessarily accompanied by colic, the pain being due to congestion of the kidney; that many cases heretofore called nephralgia or hematuric nephralgia or angio-neurotic kidney bleeding are really incident to nephritis; that a kidney incision will, in many cases, retard the nephritic process and relieve its symptoms; that anuria, due to acute ascending nephritis, can be cured by splitting of the kidney; that the kidney wounds should not be closed by suture.

THE USE OF FORMALIN IN THE TREATMENT OF SWEATING, STINKING, AND CHAFED FEET.

GERDECK (*La Presse Médicale*, No. 59, 1900) has recently published the results of his experience in the employment of formalin (formaldehyde) for the relief of hyperhidrosis of the feet so pronounced as not only to interfere with walking, but also to constitute an unbearable annoyance to the patients themselves and all surrounding them. The use of the drug in the form of vapor or powder is found to be of little service; the latter is, however, extremely useful as a deodorant, in the strength of 20 to 100, sprinkled in the stockings.

He had best results from the concentrated solution and its attenuations with water.

The feet were painted morning, noon, night, and the next morning with the concentrated solution. The odor disappeared at once, and the sweating was absolutely stopped after the third painting, and could not be reproduced even in the Turkish bath. The soldiers thus treated could take part in the marches, and many of them wore the same stockings for fourteen days without any sign of recurrence of the disgusting odor. There was recurrence of the sweating in about three months, but it was much less pronounced than before treatment and readily yielded to a repetition of the formalin applications. If, in place of the concentrated solution, feeble dilutions were used the painting had to be more frequently repeated.

For instance, when the strength of the solution was 20 to 100, it required from six to seven paintings; when it was 10 to 100, ten to twelve paintings were needed. Even the strength of 3 to 100 was effectual in controlling the odor; but the sweating was not materially influenced by any application of less strength than 5 to 100.

The concentrated solution was used only for the most severe cases. The skin of the interdigital region and that upon the back of the toes being much thinner than that upon the sole and heel, should not be painted more than twice with the concentrated solution. In case the odor persists, one or two more paintings may be made in these regions with a ten-per-cent solution. Shoes are disinfected by dropping into them four to six drops of the concentrated solution. The effect is instantaneous and absolutely satisfactory. In the severe and hopelessly crippled cases, long marches could be undertaken in about ten to fourteen days from the date of treatment. In soldiers not afflicted

with hyperhidrosis who suffered from chafed feet, two or three paintings with a concentrated formalin solution enabled them to resume their duty the following day. This treatment was painful, but extremely efficient.

THE INFLUENCE OF THE ABSENCE OF THE THYROID GLAND UPON THE CONSOLIDATION OF FRACTURES.

STEINLIN (*La Semaine Médicale*, No. 30, 1900), as a result of an extensive experimental study, notes that the consolidation of broken bones is greatly retarded by the absence of the thyroid gland. His research was actuated by the favorable result obtained by Gauthier, who was able to cure a case of false joint in the femur by the administration of thyroid extract.

Kappeler has had a similar satisfactory experience.

THE TREATMENT OF HERPES PREPUTIALIS.

The *New York Medical Journal* of August 4, 1900, quotes the *Journal de Médecine de Paris* to the effect that the small ulceration should be powdered with either bismuth, talc, or starch, previously having been washed with weak lotions of lead-water, vinegar-water, or aromatic wine. If the ulcerations persist they should be touched with a 1-to-50 solution of silver nitrate, or should be coated with an ointment containing similar proportions of salt and vaselin. In idiopathic herpes an emetic, or an emetic cathartic, should be administered by way of general treatment.

Reviews.

MEDICAL DIAGNOSIS, WITH SPECIAL REFERENCE TO PRACTICAL MEDICINE. By J. M. Da Costa, M.D., LL.D. Ninth Edition.
Philadelphia: J. B. Lippincott Co., 1900.

We have examined the pages of the ninth edition of Dr. Da Costa's classical work upon Diagnosis with more than ordinary interest. First, because it is always interesting to note how thoroughly the author of a successful work maintains the freshness of its earlier editions by carefully studying modern literature and by the skilful expurgation on the one hand of old material and installation of new information. Particularly is one interested in this process if the author is one who is actively engaged in practice, and can be supposed for many reasons to have lost some of his interest in his earlier publications.

Careful examination of the pages of the book shows that Dr. Da Costa has carried out a very considerable amount of revision, and he tells us in his preface that he has called to his assistance younger men in the profession, to whom he has entrusted some of the labor which he did not feel able to undertake himself.

The present volume is also of interest because it comes to us so soon after the sudden death of its distinguished author from that disease, angina pectoris, which so often proves fatal to members of the medical profession and to other persons in the higher walks of life who work rather with their minds than with their hands. It is startling to consider the causes of death of eminent members of the profession during the last few years, and there is a melancholy interest attached to the fact that an eminent clinician, devoting himself largely to thoracic diseases, as did Dr. Da Costa, should have died of angina pectoris; that William Pepper, also a specialist in this line, should have also succumbed but a few months ago to the same disease; and that the late Dr. Loomis, of New York, should have died of acute croupous pneumonia before the ink was dry upon his unfinished manuscript upon this disease, which he was writing for the System of Medicine he was editing.

There are several reasons why Dr. Da Costa's Diagnosis has reached a ninth edition. The chief of them is that as one reads its pages, he is impressed with the fact that the author is writing from personal experience to a large extent and knows whereof he speaks. And again, the pages present that elegance of diction which some one has well said is unfortunately met with so seldom in many of the modern medical publications. Dr. Da Costa was emphatically one of the last representatives of the school of diagnosticians who made their diagnoses partly by instinct and partly in the school of bedside training long before laboratory investigations gave the clinician material aid, and his book will for many reasons remain a classic in medical literature.

PRACTICAL GYNECOLOGY. A Comprehensive Textbook for Students and Physicians. By E. E. Montgomery, M.D. Illustrated.
Philadelphia: P. Blakiston's Son & Co.

Dr. Montgomery has produced a work upon modern gynecology which is both a representation of that branch of medical science as it exists to-day and of his own personal experience. At the start he evidently determined that his lucid descriptions

should be rendered still more clear by the juxtaposition of actual illustrations, so that while the volume has 800 pages of text, there are no less than 527 illustrations. Almost every page contains not only text but a picture as well. These, we think, add very materially to the value of the volume, particularly in the description of operative procedures and the pathological conditions which require such procedures.

Another characteristic of the volume, which we think is noteworthy, is the attention which the author has given to the subject of treatment, not only in an operative sense, but in a medicinal sense as well, and not infrequently prescriptions illustrating the method in which he employs remedies are to be found scattered through the text. Those of the profession who graduated many years ago will probably remember that at that time the use of local applications to the vagina, cervix, and uterine cavity was an exceedingly popular form of treatment. A few years later, many of these applications which were undoubtedly unwise and useless were cast aside, and in their place distinct operative interference was almost invariably recommended. Now, fortunately for the profession and the patients, gynecologists are beginning to recognize that local applications and medications are capable of doing a certain amount of good in many instances, and harmful therapeutics and too frequent operative interference are both of them relegated to the background.

Another valuable characteristic of the work is the number of pages which are devoted to differential diagnosis of conditions which are apt to be mistaken one for the other by the general practitioner. The advice which is given with regard to interference in the treatment of extra-uterine pregnancy and other conditions in which prompt action is required on the part of the physician is, we think, singularly clear and concise. Without ignoring the work of other gynecologists, the book may be said to distinctly represent the personal views and methods of its author.

A Text-book of Practical Medicine. By William Gilman Thompson, M.D.
Philadelphia: Lea Brothers & Co., 1900.

This, the first, edition of Dr. Thompson's book upon practice covers more than a thousand pages, and is therefore evidently intended to be an exhaustive contribution to the list of text-books which have already been written upon this important subject. During the last few years quite a large number of these books have been written, and almost all of them have been received very well. Indeed, one wonders how it can be that so many excellent books upon the same subject can exist without very seriously interfering with one another. Dr. Thompson has succeeded in introducing what seems to us an able presentation of most of the subjects upon which he writes, although we do not see that he has been able—and how could he?—to write about the "practice of medicine" in a very original way. The arrangement of the text has nothing particularly new about it that we have been able to discover. In other words, we wish to say to our readers that if they purchase this book, they will obtain a first-class work upon practice, representing well our knowledge concerning medical diseases at the present time, and giving sufficiently full information about most of them to thoroughly satisfy the general practitioner.

We are glad to note that Dr. Thompson recognizes very distinctly the proper limitations for the employment of the cold bath in typhoid fever. Like all other active clinical observers he is enthusiastic in its praise when properly employed, but he recognizes that some patients are not to be subjected to it. We wish that he had favored us with a more complete description of the method of reducing fever by cold sponging.

The Medical Diseases of Infancy and Childhood. By Dawson Williams, M.D. Second Edition. Revised Edition by F. S. Churchill, M.D.
Philadelphia: Lea Brothers & Co., 1900.

Dawson Williams's book upon Diseases of Infancy and Childhood is well known to the medical profession in England, and to a very considerable extent to the profession in this country. The present volume is an octavo of a little over 500 pages, in which the author gives his views in regard to the treatment of diseases in childhood. The book opens with a general introductory chapter, followed by one upon the clinical examination of children, and by another upon diseases incidental to birth. After this it goes on to consider the important question of infant feeding, and Chapter V begins the consideration of the acute specific infectious diseases. These chapters extend from 5 to 17, and are followed by one upon chorea—an interesting association of chapters, in view of the possible infectiousness of this disease. Others upon rickets and scurvy, the diseases of the blood, diseases of the glandular system and of the heart and re-

spiratory systems, then follow. After this the diseases of the digestive apparatus and adjacent organs are discussed, and the book closes with chapters upon the genito-urinary and nervous systems, and with one upon diseases of the skin. From time to time through the pages we find by the insertion of brackets that the American editor has added a very considerable amount of information to the volume; and in most instances, if not all, we think that these additions add very distinctly to the value of the work.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D. Volume III, September, 1900.

This, the third volume for this year of Progressive Medicine, deals with the diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels, diseases of the skin, diseases of the nervous system, and obstetrics. Those who saw the corresponding volume for last year will remember the care with which Dr. William Ewart, of London, discussed the questions of diseases of the thorax and circulatory system, and this care is, if possible, increased in the present article. Prescriptions, illustrating the methods which are employed by Dr. Ewart or by the physicians whom he quotes, are very frequently given throughout his pages, and his article is really a very useful and complete summary of the literature with which it is supposed to deal. The same statement may be made in regard to the article upon diseases of the skin by Dr. Stelwagon; and that of Dr. Norris upon obstetrics is an accurate reflection of the advances which have been made in this department of medicine. Here again careful descriptions of therapeutic measures have been included by the author.

THE ESSENTIALS OF MEDICAL AND CLINICAL CHEMISTRY, WITH LABORATORY EXERCISES. By Samuel E. Woody, A.M., M.D. Fourth Edition. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1900.

This book is about the size of the ordinary quiz compend, and covers the subject of which it treats very well in a space of a little over 200 pages. To those who are interested in teaching this subject we would suggest that they make a careful examination of the pages of this work with the object of determining whether it meets their needs as a text-book for their students, as it seems to be a complete condensation, but in no sense an exhaustive text-book upon medical chemistry. It is hardly fair, perhaps, to give the book the title of "Medical and Clinical Chemistry," as it contains many pages devoted to ordinary inorganic as well as organic chemistry.

LESSONS ON THE ANATOMY, PHYSIOLOGY, AND HYGIENE OF INFANCY AND CHILDHOOD FOR JUNIOR STUDENTS. By Alfred C. Cotton, A.M., M.D. Chicago: Chicago Medical Book Co., 1900.

This small book consists of lectures upon the diseases of children, given by Dr. Cotton in Chicago. It is quite copiously illustrated with many original illustrations, evidently taken from specimens in the hands of the author. It is hardly a book which can be recommended to the average student for the study of children's diseases, but will doubtless prove very useful to those students who are fortunate enough to have the opportunity of hearing Dr. Cotton's lectures.

THE STUDENTS' MEDICAL DICTIONARY. By George M. Gould, A.M., M.D. Eleventh Edition. Philadelphia: P. Blakiston's Son & Co., 1900.

The eleventh edition of Dr. Gould's Students' Dictionary has been enlarged by over one hundred pages. It will be remembered that Dr. Gould now has upon the market practically three dictionaries: his large and exhaustive Illustrated Dictionary of Medicine, the present Students' Medical Dictionary, and the Pocket Pronouncing Medical Lexicon, in which 30,000 words are pronounced and defined, the fourth edition of which we reviewed in these columns some months ago. Dr. Gould is so *facile princeps* a medical lexicographer that praise on our part for his work in this line is unnecessary. We regret that many very useful terms and definitions are included in a supplement instead of being scattered through the pages of the book in their alphabetical order. In their present position one might readily turn to the general pages, overlooking the supplement, and not find the reference which he was seeking; but we presume that the edition has been placed in this form in order to avoid altering the plates of the tenth edition.

THE USE OF THE SPHYGMOGRAPH IN CLINICAL MEDICINE. By Graham Steell, M.D., Manchester, 1899. Philadelphia: P. Blakiston's Son & Co., 1900.

Within the space of about fifty pages Dr. Steell describes the advantages which are to be obtained by the use of the sphygmograph in diagnosis. There can be no doubt that the sphygmograph properly applied not infrequently gives us interesting records of the condition of the pulse of a patient, but after a good many years' practice we have been

unable to see that the information so obtained in any way compensates for the enormous amount of trouble and time which the proper use of this instrument requires, and the variations which can be produced in the tracings, by the patient or by the operator, seriously interfere with the reliability of the apparatus. With this opinion Dr. Steell evidently does not agree.

PHYSICAL SIGNS OF PULMONARY DISEASE. By Graham Steell, M.D. Second Edition. Manchester and London, 1900.

This tiny little book of less than one hundred pages, which is sold by P. Blakiston's Son & Co, of Philadelphia, is designed as a brief summary of the important parts of physical diagnosis, chapters being devoted to inspection, auscultation, palpation, and percussion. Doubtless it is useful to Dr. Steell's own students, but we doubt whether it will have any sale in this country.

INTERNATIONAL CLINICS. A Quarterly of Clinical Articles. Edited by H. W. Cattell, A.M., M.D. Volume II, Tenth Series, 1900.
Philadelphia: J. B. Lippincott Co., 1900.

The present volume contains an article upon the kromscope, and others upon various therapeutic procedures, as, for example, the treatment of night sweats in phthisis by tellurate of sodium; others upon medicine, of which perhaps the most interesting is that of Professor Senator upon chronic indurative nephritis and the significance of albuminuria; others follow upon neurology, surgery, obstetrics, and gynecology; diseases of the eye and ear; and dermatology. The volume closes with a report of the last meeting of the American Medical Association at Atlantic City by Dr. Hinsdale. The volume well maintains the reputation which its predecessors have already obtained, and thoroughly carries out the objects of its publication.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.

Medical interest is centered for the moment in the appearance of the plague at Glasgow. Though a very unwelcome intruder, it cannot fail to be of interest to the world at large to see to what extent the most modern and improved system of sanitation is capable of arresting its spread. Up to the present moment every case under treatment in hospital can be traced to a common source of infection. A ring-fence, so to say, has been run round the locality of the outbreak, and within this area the rule of sanitary law has been proclaimed. Every tenement and house therein has been subjected to the most complete disinfection, and a sufficient supply of serum has been obtained for inoculation of all who have come within reach of contagion. Even the calling of the rat-catcher has been temporarily exalted into recognition in the hierarchy of sanitary science.

The discussion at the British Medical Association on the problems of gastric ulcer cannot be said to have added much to our knowledge of its pathology or treatment. Indeed, like the slave in the Roman noble's chariot, the function of these discussions is mainly to remind us of our ignorance—a wholesome antidote to the credulity engendered by the perusal of specialist literature. As Dr. Payne remarked, only one diagnostic sign—hyperacidity of the gastric juice—had been added in the last thirty years, and this, involving as it does the introduction of a stomach-tube, can hardly be considered a justifiable aid to diagnosis. In any case the sign is far from being of uniform occurrence, particularly in ulcers of long standing, or in the presence of chronic catarrh or dilatation of the stomach. A point of interest was brought out by the hospital statistics of gastric ulcer, viz., that it has become much more prevalent of late years; in this particular gastric ulcer falls into line with other diseases of the digestive system. The increase cannot be assigned to improved diagnosis, as beyond question this has rather served to differentiate other conditions in which epigastric pain, vomiting, and even hematemesis are present, and which would formerly have been attributed to the presence of an ulcer. On the whole there seemed to be a pretty general belief in the essential difference of the acute and chronic ulcer, though no doubt some cases of typically acute ulcer do become chronic; indeed, the reverse relation was suggested as the explanation of one case in which an acute and a chronic ulcer were found, side by side, in a stomach, as if the acute had been formed by direct infection from the chronic. As usual many different opinions were expressed as to the causation, but the theory of bacterial necrosis had evidently gained ground with the younger generation. Pye-Smith, however, still expressed

his belief in thrombosis of veins as a working hypothesis. Sufficient cases were recited to show that hematemesis is much overrated as a diagnostic sign, and also that hematemesis is far from uncommon apart from any discoverable vascular lesion or injury of the mucous membrane. With regard to the occasional occurrence of acetone in the urine during exclusive rectal alimentation, Payne laid it to the charge of starvation, and gave a like explanation of its occurrence in diabetes and advanced alcoholism.

A paper of considerable interest in the Section of Psychology was read by Dr. Easterbrook on "Organotherapeutics in Mental Diseases." The observations extended over a period of five years and were applied to thyroid, thymus, pituitary, and suprarenal extracts, as also to cerebrin, splenin, orchitin, and ovarin. In all cases, so as to eliminate as far as possible disturbing influences, patients were selected who had failed to make any progress toward recovery either spontaneously or by other modes of treatment. At the same time the diet was standardized so as to maintain the body weight as nearly as possible at its normal level. The most detailed observations refer mainly to thyroid extract, which was administered to 130 cases. The familiar symptoms under the influence of large doses came into evidence, viz., pyrexia, marked emaciation, greatly increased rapidity of pulse and respiration, with sweatings and vague general sensory disturbances. In the female patients menstruation became much more profuse. In the urine slight transitory albuminuria was found in about ten per cent of all cases, while the constantly increased output of urea and nitrogenous by-products suggested an increased catabolic energy. These effects endured so long as the extract was given, showing that the effects on metabolism, if beneficial in some cases, may also be made to last for a considerable period. Of the 130 patients, taken promiscuously and without special regard to the type of insanity, twelve recovered, twenty-nine were improved, and in eighty-nine there was no amelioration. The recoveries included four cases of stupor, three of puerperal mania, one of lactational melancholia, one of myxedema, one of simple melancholia, and two of climacteric melancholia. Along with the mental improvement physical improvement was invariable. Thymus extract in two cases, and pituitary in four cases, were of no value; it must, however, be admitted that in the cases submitted to trial—for example, general paralysis of the insane—the way was not made easy for the remedial agents. Cerebrin was given to nineteen cases, with improvement in three, recovery in two, and no result in the remainder. Orchitic extract produced some improvement in three out of eight patients, all males, and ovarian extract in four out of thirty-six female cases. Other alienists who joined in the discussion on the paper conveyed an impression of disappointment in the results of organotherapeutics, with the exception of thyroid extract.

While on the subject of thyroid extract I may perhaps refer to a recent paper of Murray's in which he advocates the use of the extract in the treatment of simple goitre in young adults. He maintains that in many cases it is possible by this means altogether to avoid operative measures, while in other cases it constitutes a valuable preliminary to operation. The most favorable cases for such medical treatment are those of simple parenchymatous enlargement of the thyroid gland occurring in adolescents and young adults. His theory is one that has already been put forward by other clinicians, that the enlargement is a true hypertrophy of the gland, which occurs in response to some demand for an increased supply of its secretion; in this case the extract is beneficial by allowing the hypertrophied gland to pass into a resting condition.

In the Section of Tropical Diseases the discussion on the action and mode of employment of quinine failed to add much to our existing imperfect knowledge. There was a general feeling that quinine is prophylactic against the milder forms of malaria; indeed, the investigations on this head instituted on the West Coast of Africa under the auspices of the Colonial Office make it appear to be prophylactic in over eighty-seven per cent of cases. The word "prophylactic" would, however, seem in some sense a misnomer, as the action of the drug is not on the blood, but on the parasites in the blood. Dr. Fielding-Ould maintained that the beneficial action of quinine is due to the death and subsequent disintegration of the malarial parasite, and to the fact that quinine binds more closely to the hemoglobin the oxygen present in it. It might be given indifferently by mouth, rectum, or subcutaneously, but Manson remarked that to give it by the mouth in the presence of gastrointestinal catarrh is to court disappointment.

Forbes Ross discoursed on the efficacy of strophanthus in the treatment of heart failure in the aged, but with special reservations. Thus he had found good results from strophanthus backed by an appropriate dietary in a case in which strophanthus alone had failed. He found nervine stimulants useful accessories to strophanthus, more particularly in cases of cerebral degeneration, while a tonic dietary promoted the same end. He found that strophanthus might be administered for prolonged periods without ill effect on the cardiac, nervous, and digestive systems. The success or failure of strophanthus often depended on the preliminary removal of conditions outside the range of action of the drugs. Lastly, many of the ill effects ascribed to strophanthus were due to its administration combined with a mineral acid.

Ewart read notes of six cases in which he had employed subcutaneous saline injections in pneumonia. The class of cases selected was that in which the disease is pretty sure to be dangerous on account of constitutional debility. Only one of the six cases recovered, and that one was a debilitated woman of thirty-seven. A pint of normal saline solution was injected on four successive days alternately into the right and left subclavian regions into the subcutaneous tissue.

Stanley Boyd summarized the cases recorded of oophorectomy for cancer of the breast—thirty-eight in all. In seventeen a beneficial result was obtained, while in twenty-one little or no effect was observed. The best results seemed to have been obtained in patients over forty years of age, but before the occurrence of the menopause, and in slowly growing cancers. It is desirable in all cases to treat the growth directly by excision and to reserve the oophorectomy for recurrences.

Bennett's remarks on the methods of treatment of simple subcutaneous fractures were made exceptionally interesting from the fact that he had taken pains to ascertain the methods practiced by some 300 surgeons throughout the country. A large majority declared against open operation in simple fractures of the limbs. Splints seemed to be losing favor on account of the early employment of passive movements. Surgeons who used passive movements early seemed to get the speediest recoveries. Operation by wiring was mostly reserved for special forms of fracture, such as the oblique and spiral, but was employed in as many as seventy-five per cent of all cases for fractured patella; the chief danger seemed to be due to defective asepsis. Some wired at once (and we fancy this is the common practice in the London hospitals), others after an interval usually of about seven days.

PARIS LETTER.

By R. H. Turner, M.D. (Paris).

Medical life in Paris during the last month has been centered in the doings of the Medical Congress, and nothing of much importance has happened outside of this. The first general meeting of the Congress took place in the Salle des Fêtes. The President of the Republic was to have attended it, but on account of the assassination of the King of Italy abstained from coming, as did the Italian delegates. The first speech was made by Professor Lannelongue, the president of the Congress. It was at first rather hard to hear what he had to say, on account of the size of the hall. He said a few words about the new doctrines that were being established at the end of this century, doctrines which were well-nigh as unknown to medical men of former times as are the mysterious rays of the spectrum which give no light. Transformation in all fields of knowledge by the means of science is the key-note of the present day, and the results are the more readily obtained because interchange of ideas takes place between the different nations. Isolation is no longer permissible, and by means of comparing the results obtained by the different societies a better understanding of the true laws of nature can be obtained. Speaking of more practical things Dr. Lannelongue recommended the adoption of a universal medical vocabulary. No Volapük is as yet to be thought of, however. He offered a hearty welcome to all the members of the Congress, and ended his speech by citing the words that Bouillaud, the great heart specialist, the first president of an international medical congress, spoke in 1867: "Thanks to you, my life has witnessed its crowning scene. I shall carry you henceforth in the depths of my heart, and you will live there till it stops beating."

Mr. Monis, the Minister of Justice, made a speech of some importance, which was much applauded, and he was succeeded by Dr. Chauffard, who gave an account of the

organization of the Congress. There were, it seems, 6000 members inscribed, of whom 750 were Russians, 570 Germans, 350 Americans, 330 Italians, and 220 Spanish. Very few English physicians had themselves inscribed, only about 220, but this can be accounted for by the war in the Transvaal and the strained relations between France and England. A large number of speeches were made by the representatives of the different countries, and the last discourse was one by Professor Virchow on traumatism and infection, which was read in German.

Amongst the many subjects chosen for discussion in the sections of internal medicine and therapeutics, we shall speak only of the most important ones. Muco-membranous colitis was a subject that was thoroughly discussed. Dr. Boas, of Berlin, said there were three distinct forms of this affection: The first variety, the one usually described, and also the most frequent; a second form that came in spells, nothing special taking place between the attacks; and a third form which could be brought about by administering solutions of tannin. Dr. Mannaberg insisted on the distinction that should be made between membranous enteritis and mucous colitis. The first form is due to a catarrhal condition of the large intestine, and is brought on by the usual causes of irritation. Mucous colitis, on the contrary, depends more upon the general health and is due to hysteria or neurasthenia. Certain diseases of the genital apparatus, both in men and women, psychical affections, constipation, irritant rectal injections, and organic diseases of the intestine, are also to be considered. Professor Mathieu said that this illness was especially to be observed in patients having some neuropathic tendency. The local and general condition of the patient must be taken into account, and treated separately. Constipation is an important factor, which should be relieved as much as possible. No irritant drugs should be used, nothing that can increase the tendency to spasmodic contraction. Castor oil, profuse enemata, and belladonna are amongst the best preparations that can be used. Castor oil should be given in the morning in small doses, and given alternately with enemata. One and a half to two and a half liters should be given, and boiled water, or water to which biborate or salicylate of soda has been added, can be administered. Any irritation of the intestine, any astringent injections, or even massage, should be avoided when there is hyperesthesia or spasm. A vegetable diet has been often recommended, but is not tolerated by all patients. Belladonna is a useful drug, and much better indicated than opium. At Plombières prolonged baths and hot enemata are the basis of the treatment. Dr. de Langenhagen, of Plombières, spoke of six hundred cases he had seen, and said there was a diarrheic form, which he had observed in thirty-two cases. There are three fundamental signs of enterocolitis—presence of membranes or glaireous deposit in the discharges, irregularity of the intestinal functions, and pain; the painful symptoms are lacking in a fifth of the cases. As for intestinal lithiasis, it is but a simple complication, and has been noticed in about nine cases in a hundred.

Another subject that was of interest is the causes of gout. Dr. Legendre, of Paris, spoke of the different theories invoked tending to show that this disease is due to an accumulation of uric acid in the system. A correlation should be established between gout and diabetes, the latter disease being brought about by the accumulation of sugar, which cannot be completely transformed. Another point to be considered is that by preventing the elimination of uric acid the kidneys may on account of their faulty condition predispose to this illness. Acquired gout is due to defective alimentation, using foods which are too rich in oxalic acid, or to fermented drinks, insufficient exercise, and overexercise of the nervous system, or action of a poison like lead, for instance.

Sir Dyce Duckworth spoke on the same subject, and his conclusions were well-nigh identical with those of Dr. Legendre.

Dr. Ch. Achard made a communication on renal insufficiency. The diagnosis of this condition used to be made by discovering the different phenomena observed, such as dropsy, bruit de galop, and other such symptoms. The urine was also very simply tested, its volume and density being measured, and albumin and casts being sought for. Still the anatomical alteration and the physiological disorders do not always go together, and the functions of the kidneys may be jeopardized without their being revealed by any prominent symptom. It is in such cases that an early diagnosis is useful, and various means have been employed recently, such as chemical methods, physical methods (cryoscopy), and physiological methods (toxicity). All these procedures are somewhat complicated, and Dr. Achard spoke of the method which consists

in introducing a certain amount of methylene blue, for instance, into the system and seeing how long the kidneys take to throw off this drug. It should be remembered that the kidney is not only a filter, but also a gland, having certain secretions of which not much is known as yet.

In the Section of Infantile Medicine the use of sterilized milk and artificial food was treated by Jacobi, of New York. Dr. Jacobi discussed the use of cow's milk, and said that used alone with or without water it was susceptible of causing constipation, diarrhea, rickets, or scurvy. Even when children are brought up at the breast, they should be given water when there is an insufficiency of milk. The loss of weight is thereby prevented. The employment of decoctions of cereals is useful for diluting the excess of casein in cow's milk. A certain amount of cane-sugar can be added, as the formation of lactic acid has an antiseptic action. Fat may also be added in some cases to increase the nutritive qualities of milk, and also to divide the casein into very fine particles. Mineral substances are not the same in cow's milk and in woman's milk. Adding chloride of sodium to cow's milk is therefore necessary for physiological and chemical reasons.

Professor Heubner, of Berlin, insisted on the addition of sugar, which should bring up the quantity to seven per cent, the amount found in woman's milk. The addition of hydrocarbons is sometimes advisable. Artificial digestion of the milk may also be carried out, as in the case of peptonized milk, Voltmer's milk, de Backhaus's milk, and others used in Germany. Other physicians prefer to diminish the quantity of proteid substances in milk, while they keep the original quantity of fat, and this can be obtained by centrifugal action. There is left, for instance, one per cent of casein and three per cent of fat (Goertner's Fettmilch), or well determined quantities of cream may be added to diluted milk (mixture of Bredert) or to whey (Monti). Lastly, it has been found advantageous in some cases to replace the milk-sugar by an easier consumed sugar, such as maltose.

Dr. Alex. Johannessen, of Christiania, read a report on this subject, and said he considered Pasteurization of milk at 70° C. the best treatment that could be followed. By this means the bacteria are destroyed without there being any modifications in the chemical composition of the milk. It is important that milk should from the start be kept from any impurities. The best means to be followed to prevent milk from becoming soiled would be to establish by means of councils of hygiene a control over the establishments where cows are kept, and adopt special precautions to prevent the milk being contaminated.

Professor Monti, of Vienna, said that the acidity of cow's milk, being greater than that of woman's, should be diminished by the addition of carbonate of potassium. Whey should also be added to dilute the milk, and sterilization can be obtained by heating the milk up to 60° for ten minutes, and then keeping it at a temperature of six degrees.

Dr. Variot seemed to prefer a different method, which consists in heating milk up to 115° in bottles containing half or quarter of a liter, the bottles being hermetically closed with corks garnished with paraffine. The milk can be kept two weeks in this way. Dr. Variot has carried out this system at the dispensary of Belleville with good results.

Prof. Alex. Johannessen showed by statistics that the percentage of deaths of infants is very variable according to the countries observed. It is 16.8 per cent in France, 20.5 in Prussia, 24.6 in Austria, but in Norway only 9.7 per cent, which is the lowest for any European country.

Another subject for discussion was gastro-enteritis amongst infants, and this subject was the theme of several reports. Dr. Escherich, of Graz, whose reputation has been established by the microbe which bears his name, began by saying that the development of microbes in the intestine of the infant is subject to certain laws. As the chemical constitution of the contents of the intestine does not vary much, the bacteria are developed in a certain specified manner. The bacterian flora is independent in a great measure of the quantity or quality of microbes that are absorbed. Admit, however, a change in the composition of the contents of the intestine, or a modification of its secretions, and immediately there will take place a multiplication of new bacteria. If, however, a new species of microbe is absorbed, and if this form is capable of producing fermentation, then there may be formation of various poisons, inflammatory processes may set in, and various lesions be produced. Such is undoubtedly the cause of so many infections during the summer months.

Dr. Baginsky spoke of gastroenteritis from the pathological point of view. This affection is characterized by diminution of the

digestive secretions, vitiation of the digestive functions, with abnormal fermentations, diminution of assimilation, vomiting and diarrhea, and constipation with colic. The anatomical lesions observed are hyperemia and edematous swelling, cellular infiltration of the mucous membrane, and catarrhal secretion. In cases of infantile cholera there is destruction of the gastrointestinal epithelium on large areas. The glandular cells are swollen and granulous, and there is sometimes necrosis. Secondary lesions of the kidneys and liver may also be observed. There is sometimes intestinal atrophy, athrepsia, and disappearance of the glandular apparatus of the mucous membrane, while folliculitis is observed. Necrosis may set in, and large areas of substance be destroyed.

Dr. Francisco Fede, of Naples, described in a few words the symptoms observed, and added that the curative treatment consisted especially in rules of hygiene and diet. When there is an acute attack, complete abstinence should be enforced, and only water given. Instead of giving cow's milk or using the milk bottle, a wet-nurse should be employed. Another point that should be observed is the elimination and disinfection of the contents of the intestine; this can be produced by the use of calomel, castor oil, the washing out of the stomach and intestines with boracic acid, carbolic acid, or creolin solutions. When there is much diarrhea, lactic or hydrochloric acid should be employed, or preparations of tannin or bismuth. When there is much pain, cataplasms, calming preparations, and baths are good. If depression is noticed, aromatic baths, quinine, caffeine, ether, asafetida, musk, or injections of a saline solution are indicated.

Dr. Marfan studied the question from an etiological point of view. One reason for the prevalence of gastroenteritis amongst small children is the defective condition of their intestinal apparatus. There are two varieties of gastroenteritis: the first variety, the dyspeptic form, is due either to an excess of milk ingested or to the child having been fed too soon with other food. The disease is then due to an endogenic infection and intoxication. As for the second variety, it is brought about by an infection due to bad milk. Sterilization of milk will therefore put a stop to this. In the toxic form some chemical substance absorbed is to be blamed. Lastly, there is another form, which is due to measles, grippe, diphtheria, and kindred affections.

Notes and Queries.

THE RELATION OF THE PHYSICIAN TO THE MANUFACTURING DRUGGIST.

Indiscriminate abuse of manufacturers of pharmaceutical preparations is sometimes the veriest rant and cant. It is easy and self-flattering, but by no means therefore either just or wise. In view of the astonishing lapses of medical men and of their participation in pharmaceutical frauds, it tends to provoke ironical laughter. If one takes the drug-trade journals of our country and compares them dispassionately with the medical journals, one is not certain that we as a profession will appear to better advantage in the way of honor and ideality than do the manufacturers. Surely one will find as frequent proofs of fraud, shamelessness, and unscience among journals edited by doctors of medicine as in the literature of the pharmacists and manufacturers. The worst of either are bad enough, and any scorn upon our part is indicative of egotism rather than of a study of actual facts and conditions. Whatever the justice of complaints against the manufacturers, their "instruction of medical men," etc., we need not be unjust, and we must not be indiscriminate in our criticisms. As a profession we are under great obligations to pharmacy and to purely commercially-motived manufacturers for many most valuable means of progress and for much therapeutic advance itself. There are many such manufacturers who have as pure and as strictly professional aims, and who realize them as perfectly in practice, as do physicians. There are to-day biological and chemical laboratories owned and operated by lay capital for the sake of money-making, and yet from which many professional laboratories might learn both science and ethics.—*Philadelphia Medical Journal*, July 21, 1900.

SENECIO JACOBÆA.

In the September issue of the THERAPEUTIC GAZETTE there was published an original article upon the influence of this drug. We desire to call the attention of our readers to the fact that *Senecio aureus* Lin., commonly known as Life root, is the American representative of the plant above named. It is the therapeutic equivalent of *Senecio Jacobæa*, and preparations of the American plant will produce results which are in every way identical.